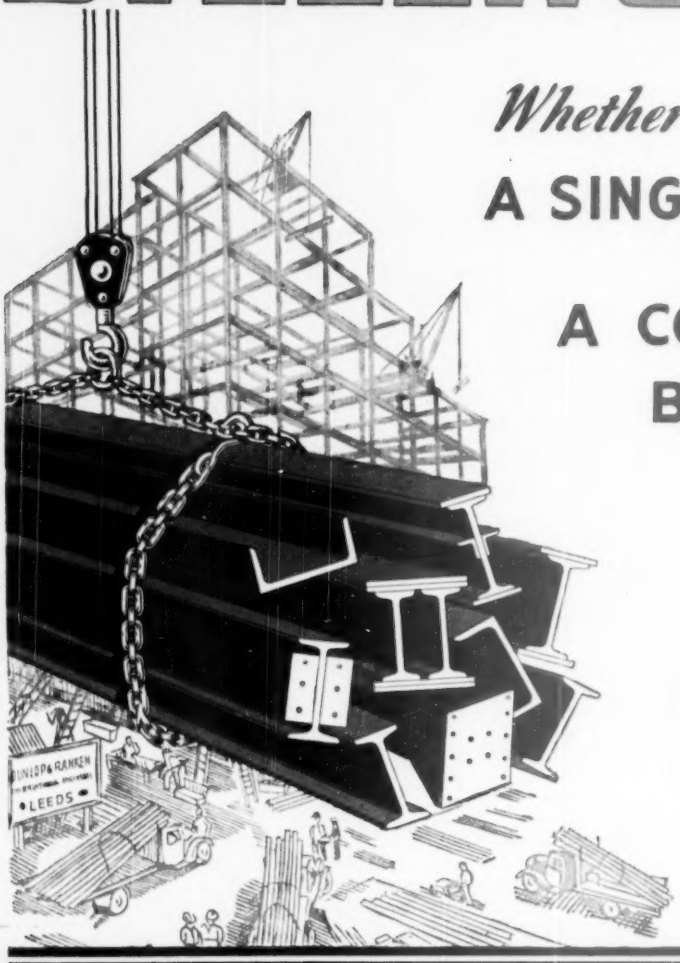
# THE ARCHITECT & BUILDING NEWS

*In this issue*

- FOUR SCHOOLS FOR LANCASHIRE COUNTY COUNCIL
- HOUSE AT EWELL, SURREY
- HOUSING FOR LLANRWST U.D.C.

JULY 21, 1950 · VOL 198 · NO 4257 · ONE SHILLING WEEKLY

# STEELWORK

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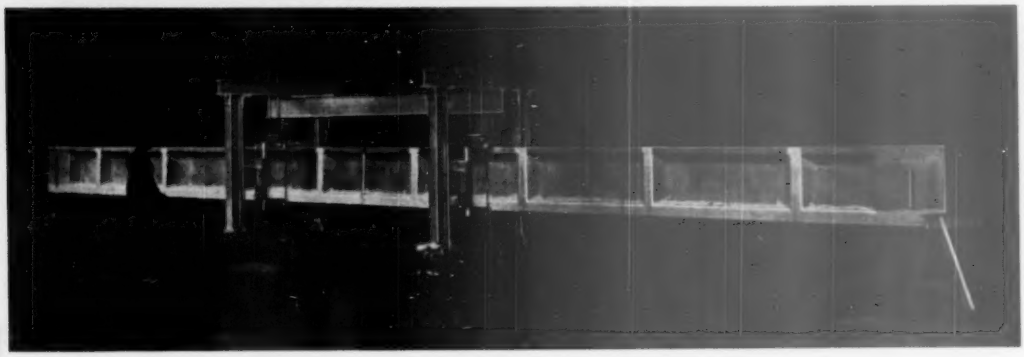

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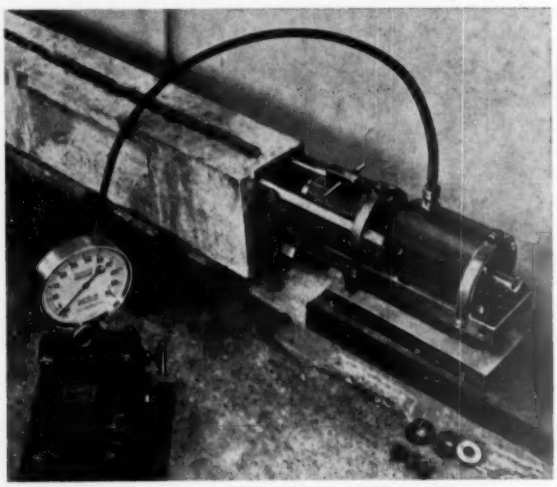

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The advertisement reproduced here is appearing in various Industrial Journals.
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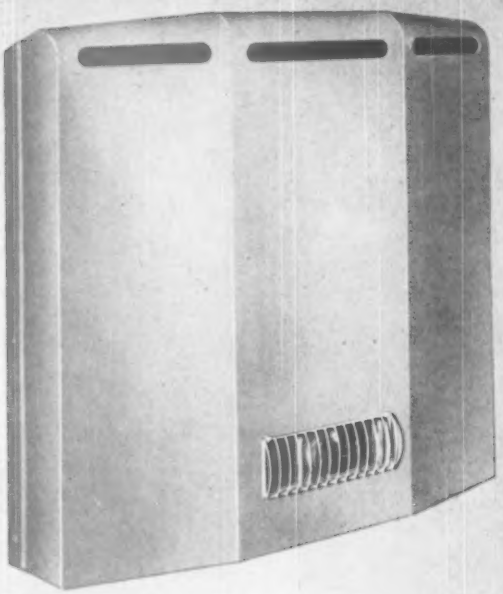

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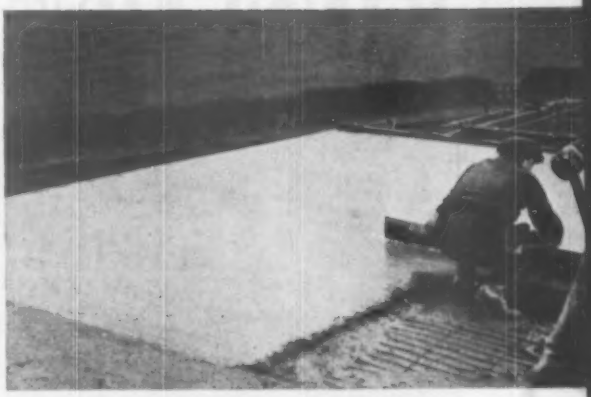
# MARLITH

## *used as permanent shuttering*

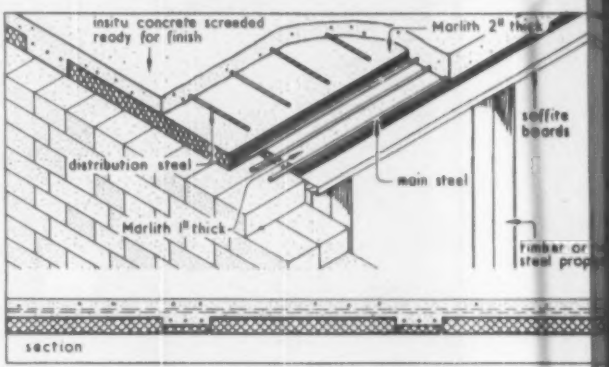
## speeds up construction, reduces costs, and provides excellent thermal insulation



THE SHUTTERING for this flat in-situ reinforced concrete roof consisted of 2-inch MARLITH laid in temporary 2" x 2" x 3/16" steel tees supported by tubular steel scaffolding. The concrete was poured and the reinforcement applied in the normal way. When the concrete was set, the temporary steel tees and scaffolding were removed, leaving the underside of the MARLITH ready for plastering.

The drawing on right shows a similar construction in which timber props were used in place of tubular scaffolding, in conjunction with soffite boards and 1" thick MARLITH filling pieces.

The use of MARLITH in this way speeds up construction and reduces costs by eliminating the need for erecting and dismantling steel or timber shuttering and the application of insulation as a separate operation. It reduces the thermal transmittance "U" value of a 4½" flat concrete roof from 0·61 to 0·20, and the increased thermal insulation will maintain the temperature of the interior surface of the roof, thus minimising or preventing the formation of condensation.




# MARLITH

## Wood Wool Building Slabs

*The Marley Tile Company Limited · Sevenoaks · Kent*

THE PHOTOGRAPHS were taken at Whitby Junior and Infants School, and show: *below*, MARLITH slabs being placed in position in the temporary steel tees; *above*, concrete being levelled.

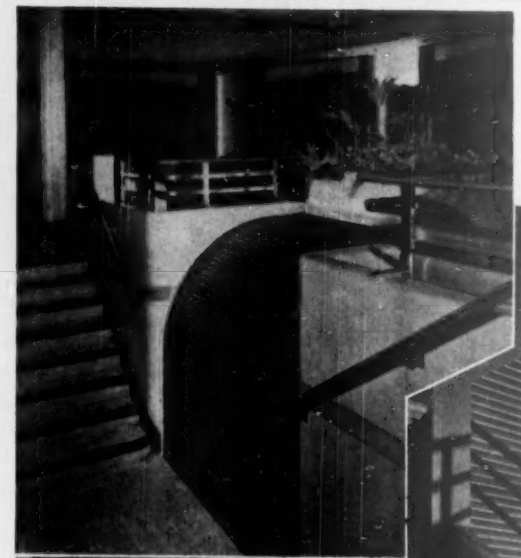
ARCHITECTS: John Keppie & Henderson & J. L. Gleave, Chartered Architects, 196 West Regent Street, Glasgow C2

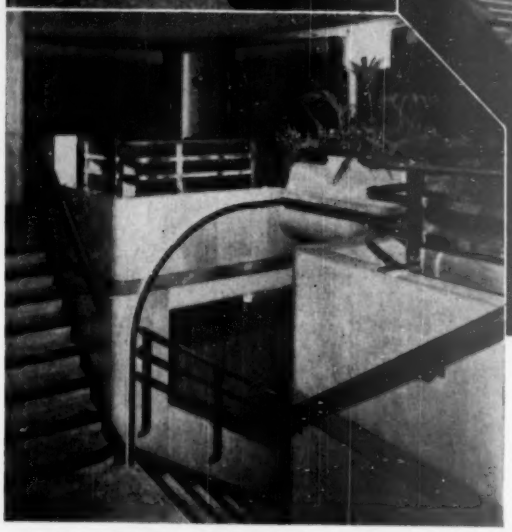
CONTRACTORS: Messrs. Jaram & Son, 20A Gladstone Street, Scarborough.

AUTHORITY: North Riding Education Committee, Northallerton

# KINNEAR PATENT STEEL ROLLING SHUTTERS

Registered KINNEAR Trade Mark





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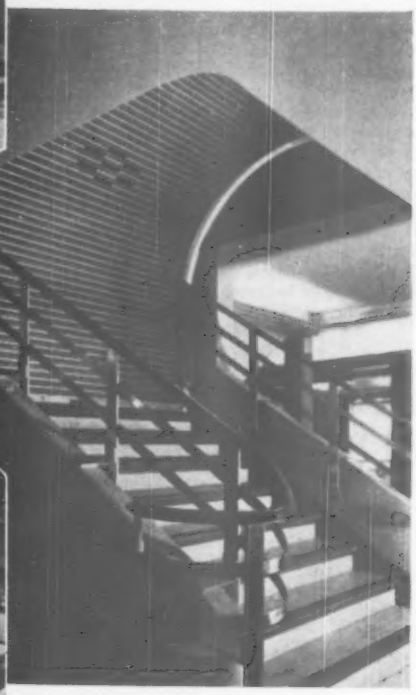

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*General view of installation of Briggs Bitumetal Roof showing Aluminium Deck Units. The underside presents a clean, attractive ceiling.*

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*Architect:*
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*Architect:*
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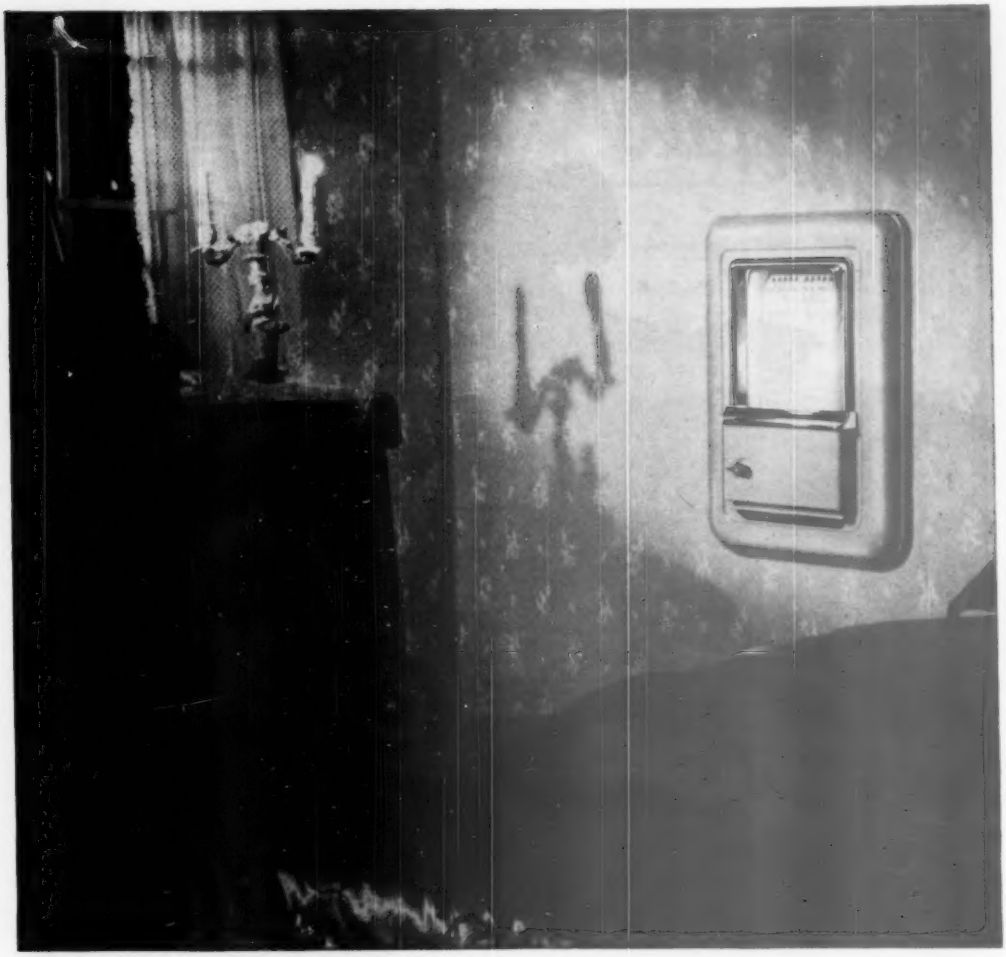
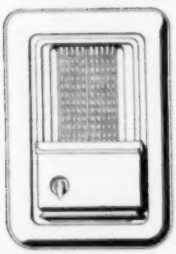
*Architect:*
R. K. Lewis, Esq., A.R.I.B.A.
Birmingham.

Wood's Bakery, Perth.

*Architects:*
Messrs. G. P. K. Young & Son, F.R.I.B.A. Perth.





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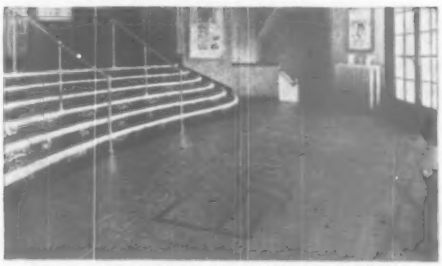
*Sematic decorative tile flooring installed in the canteen of Joseph Terry & Sons Ltd., York.*

*The reception room of the Standard Motor Co. Ltd., Coventry, equipped with Sematic decorative floor tiles.*



*Sematic decorative tile flooring in the foyer of the Essoldo Cinema, Kilburn, London, N.W.6.*

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*for*

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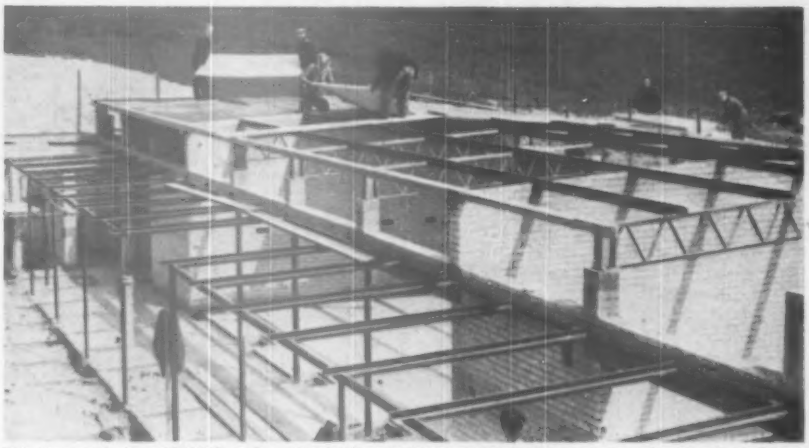
STRAMIT DECKING



*This photograph shows STRAMIT roofing slabs (4' 0" x 8' 3") being laid to form a decking for bituminous felt at Elaine Avenue Primary School, Strood, Kent. (Architects : Messrs. Moiret & Wood, A.R.I.B.A., London in collaboration with S. H. Loweth, Esq., F.S.A., F.R.I.B.A., County Architect. Roofing Contractors: Neuchatel Asphalte Co., Ltd., London. General Contractors : Kent & Sussex Contractors, Ltd., Sidcup, Kent. Special purlins to the registered design of Messrs. Moiret & Wood).*

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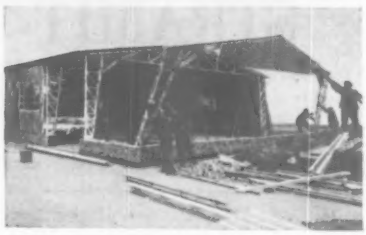

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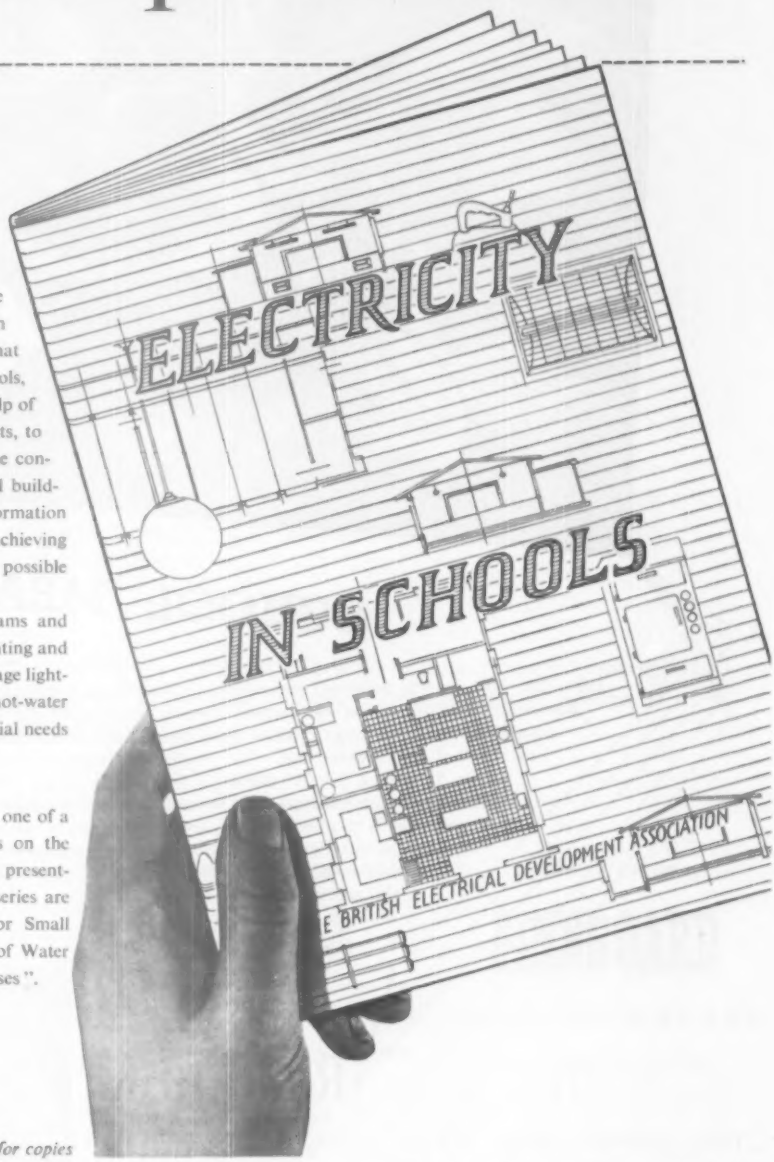


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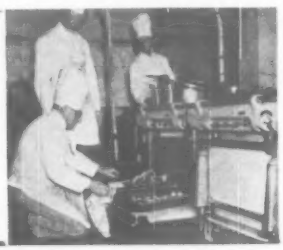

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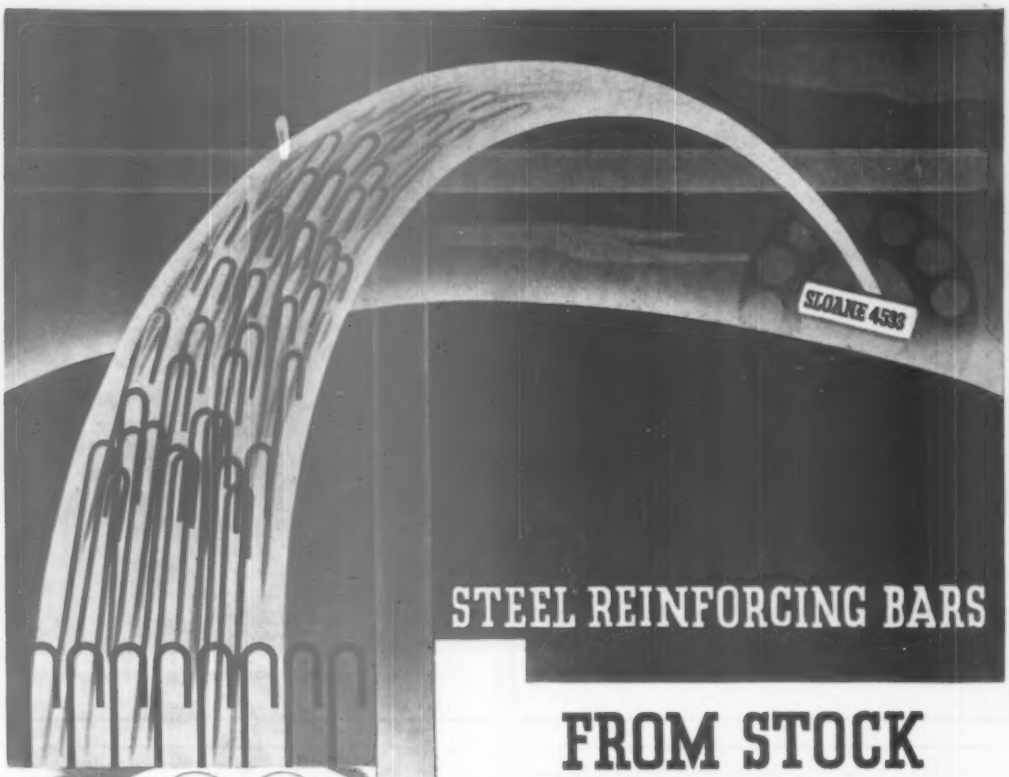


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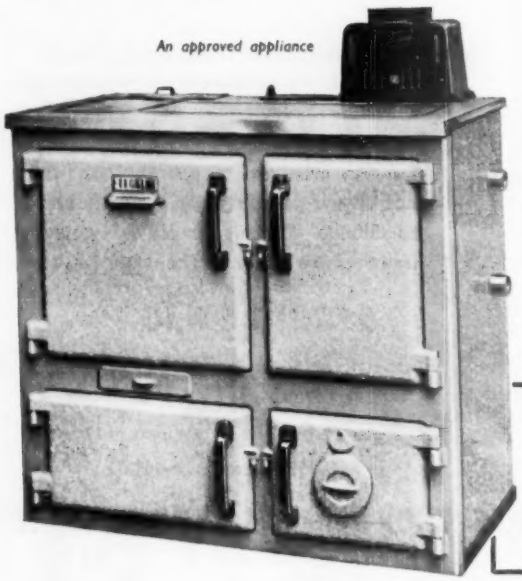

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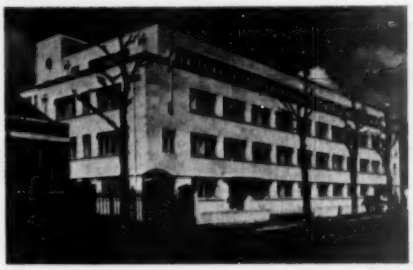

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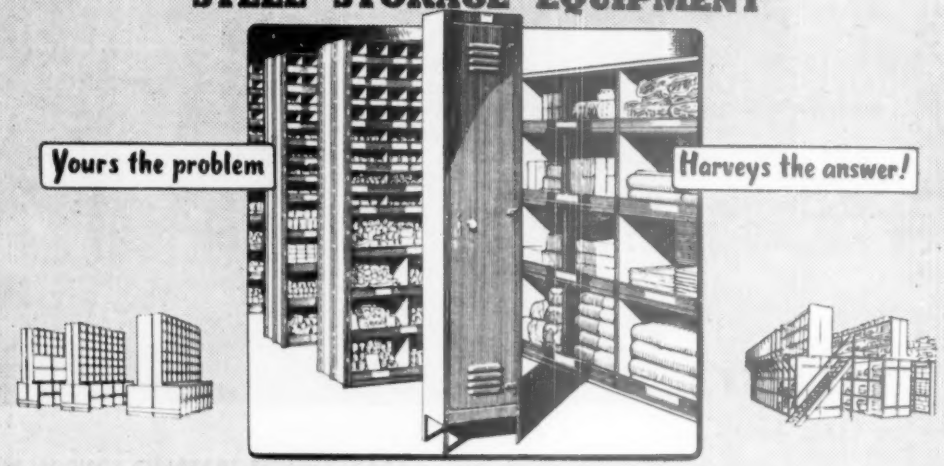

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Vol. 198. No. 4257. THE ARCHITECT & BUILDING NEWS July 21, 1950

The "Architect and Building News" incorporates the "Architect," founded in 1869, and the "Building News," founded in 1854. The annual subscription, inland and overseas, is £2 15s. 0d. post paid; U.S.A. and Canada $9.00

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# OUT OF PRINT

IT is generally conceded that, in this country, there is a shortage of good new architectural and building books and it has been put to us that but few new or soundly revised works of the class usually known as text-books or standard works for students are making a much-needed appearance.

This is rather curious because the output of the book-publishing trade is now three times that of pre-war; the total amount involved is £35¼ millions (1949) of which one-third, or an amount equal to the total of pre-war days, is exported.

Yet in certain lists of recommended books which we have seen from time to time and which are made for those preparing for professional examinations, some 40 to 50 per cent. of the books listed are out-of-print. This fact, in spite of the additional fact that there are now some 40,000,000 books in our public libraries, produces strains on technical and professional libraries of considerable intensity; the two chief of which can be summarised as long waiting lists and hard wear and tear on texts and bindings, especially where, as at the R.I.B.A. Library, there is a lending service.

This situation has arisen, of course, from the shortages of paper and the non-publication of essential books which occurred during the war years. Unfortunately, in spite of the present prosperity (by sterling value) of the book trade, this loss and lag has never been made up.

Cost of books has gone up rather more than 2½ times so, apart from a general assumption that there is only a small increase in the total number of books now put on the market as compared with pre-war, we can also assume that, because of book prices, there is a corresponding increase in the cost of training architects and technicians, or, alternatively because of scarcity, conclude that training is less efficient than it was. We would remind our readers that a "sixpenny" cheap paper-bound book now costs 1/6 and a 7/6 well-illustrated architectural or art book is now in the 25/- range.

Immediate causes of book shortage presumably arise first from high general costs of printing, binding and marketing and then from the reluctance of publishers to take undue risks other than for books for which, even while to some extent technical, there is a reasonably wide lay-interest to buttress the sales. Sales, in these days, must be quick; there is distinctly less "long-term" sales policy than heretofore; the explanation that everything is speeded-up is not quite sufficient to account for this tendency.

Let us examine a few specific cases; architectural history has only been kept up—for the young student—by new editions of what is more an encyclopaedia than a history—the invaluable Banister Fletcher. Many special periods are sadly lacking in recent books, only one smaller general history has been recently republished and one new "outline" added. We hear rumours of the re-writing of a once well-known four-volume history, but how long will it take?

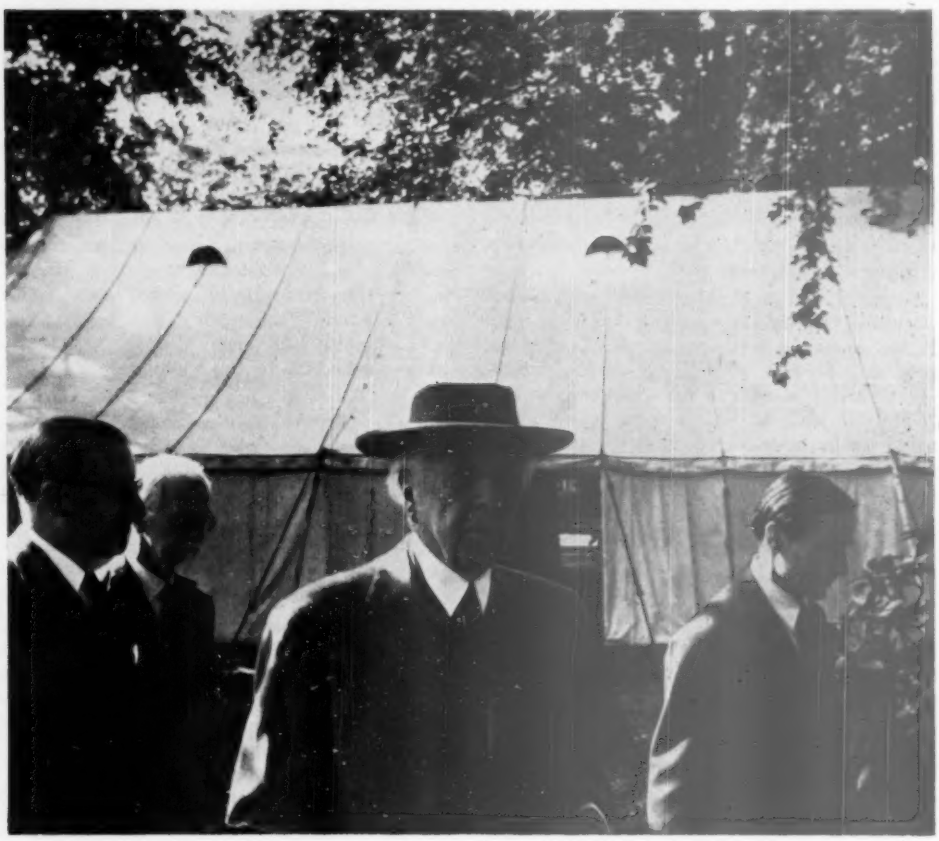
Under the heading of "theory," it is extraordinary that no English translation or even adequate summary of Guadet's *Eléments* has ever appeared: not that it would necessarily "do" now, but what else is there? Atkinson and Bagenal's first volume (never reprinted) has never had its companions beside it on the book-shelves.

Town planning is still without a standard design text-book; Raymond Unwin's book—fetching high second-hand prices—has never been reprinted since 1932; though, here again, we believe a new edition is

being considered. Which reminds us that the "rehashing of an old standard work, however good, is not always the best way of producing a text-book. It has been tried many times and for every success there has been many a failure or an indifferent production. Certain text-books are established immediately as "classics," either by reason of meeting a contemporary or short-lived need—this is the kind that should not be revised or republished—or because they are sufficiently generalised and "standard" to fill universal and fundamental—almost axiomatic—requirements; these are the books to keep in print with constant revision and, if possible, stability or reduction of price. In the architectural sphere, this is not being done adequately; we could name a score of books for which contemparary architecture would feel strengthened, if they were only still purchasable and not on the O.P. lists.

Of making many books there is no end; but, unfortunately, there seems now to be an end, or no beginning, for too many books. All this is a serious problem for architecture and the building industry, in spite of the fact that the latter is perhaps being fairly well served in the category of up-to-date books on materials and construction. It is the relation of these last to form, texture, composition, planning and tradition that is the present lacuna.

The R.I.B.A. Library and the architectural school libraries try to cope with the situation by acquiring more loan books for the students who need them but these efforts only satisfy in a small and one-sided way the present intense demands. The R.I.B.A. Text-Books Committee tries to find out what is needed and provides some alleviation. But the libraries and committees of the profession are not enough; help is required from publishers and booksellers alike. There should be much greater liaison between the profession, its schools and examiners, and the book trade generally. If this cannot happen, it may well be that the cultural quality of architecture will, in the long run, suffer eclipse; it is already within the penumbral shadow.



*In Bedford Square for the Annual Prizegiving last Friday. L. to R.: Mr. H. J. Alexander; Dr. Charles Holden; Mr. Frank Lloyd Wright and Mr. Robert Furneaux Jordan*

# EVENTS AND COMMENTS

## *FRANK LLOYD WRIGHT*

SO much happened last week in the London architectural world that it is difficult to know where to start. The visit of Mr. and Mrs. Frank Lloyd Wright was, however, without doubt the most important event. The zest with which F. L. W. took part in the various ceremonies and festivities organised in his honour should have been an inspiration to the young and must have given considerable hope to the more mature. I do not know exactly how many speeches he made but I should guess about ten, all apparently *ex tempore*.

I had not seen the great man before and was greatly impressed by his fine appearance and immense dignity. I am told by people who know that he is now less flamboyant than he was, and more the great man. He is still, however, the prophet and revolutionary.

The week's programme included a dinner at the A.A., a week-end in the Cotswolds, lunch with the R.I.B.A. Council, lunch with the British Council (at the Conservative Club!), a talk with the students at the A.A., dinner with the Architecture Club at the Goldsmiths' Hall, and an address at the A.A. School prizegiving.

*Mrs. Frank Lloyd Wright with the President of the A.A., Mr. S. E. T. Cusdin at the A.A. Annual Prizegiving in Bedford Square.*

*Mr. Alvar Aalto in Bedford Square for the A.A. Prizegiving before leaving London after his four weeks visit*

The A.A. prizegiving was once again held in a marquee in the gardens of Bedford Square. The arrangements were as usual good and F. L. W.'s address was reported by the press and recorded by the B.B.C. The Master started off by saying that prizes did not mean a thing, and, having presented the prizes, pointed out that it was the first time in his life that he had taken part in anything of the kind. Generally his address followed the same lines as at the Architecture Club the night before, although his arguments were somewhat differently marshalled. His ending was characteristic; he suddenly sat down, saying " this can't go on for ever." Robert Jordan had previously spoken of the work of the school, putting, I thought, a shade too much emphasis on the philosophy of architecture. Architectural philosophy had been fairly thick in the air all the week, and it seemed to me that a refreshing draught from the other direction would have done no harm. I half expected that Anthony Chitty, in proposing the vote of thanks, would provide it; instead he turned some very witty sentences in the best Howard Robertson tradition. I wish I could report F. L. W.'s asides and interruptions, but I could not hear some of them and have forgotten the others. During the distribution of prizes he had something to say to each winner. " Don't spend it foolishly." " A hundred pounds for the study of building materials! It's a disgrace, it ought to be a thousand," and so on. John Ambrose, Chairman of the Students Committee, seconded the vote of thanks with a well-prepared little speech. Afterwards there was tea in the library and dining room at the A.A.

## *THIS WAY TO THE TOMB*

THE success of the A.A. Dramatic Society's production of the " Provok'd Wife " last year led them to attempt something far more ambitious in their major

performance this year. Ronald Duncan's "This Way to the Tomb," with music by Benjamin Britten, is a very considerable undertaking. In my opinion the Society fully justified its choice. The acting, production, costumes and the set were first-rate and although the choral singing was a little shaky here and there it was fully atoned for by the delightful counter-tenor solos of Michael Cain. This is no place to indulge in dramatic criticism but in a good company Denys Hinton and Martin Platt were outstanding and their excellence was reflected in all the smaller parts, but I did miss that charming actress Miss Patricia Bowden, to whom I am devoted. The play I found boring, amusing and moving by turns.

### DEATH OF PROFESSOR ELIEL SAARINEN

IT was very sad to read of the death of last year's R.I.B.A. gold medallist so soon after his award. Professor Aalto, who flew back to Helsinki to attend the funeral (Saarinen's body having been flown from America), told one of my agents that it would be the tenth state funeral in the history of Finland. The last was held early in the century. Of the ten four have been those of architects.

### THE PUTTING OUT OF FLAGS

THE ridiculous business of the banning of house flags led by the Marylebone Borough Council and copied in one or two other places, was recently the subject of questions to Mr. Dalton in the House of Commons. The Minister made it perfectly clear that he considered the enforcement of the London Building Act on this point to be silly. Nevertheless it seems that the councils concerned are proposing to continue their campaign so that, if common sense is to prevail, it will be necessary to alter the law. This would entail a great deal of work for quite a number of people. I find the attitude of the Marylebone Council quite intolerable.

### SWEDISH OPINION

"SO you write this," said my Swedish friend, glancing at one of my most splendid efforts. "In Sweden we have no time for reading this sort of thing. Other people's doings! Why, we have work to do." He went on to say that in Sweden the architectural and other professions are so small that the first reaction of anyone reading about a function would be to think "Why was I not asked?" Only the day before I had been told by a Netherlander that we British were a lazy lot. By their standards perhaps we are, but then they regard hard work as an end in itself, while I at any rate regard it as an unfortunate necessity.

### A PLACE OF WORK

I DARE say that in your time you have visited the homes of the great ones of the past and seen where they worked. You may have touched the little writing table which H. G. Wells used, or seen the extraordinary saddle on a post upon which the Kaiser always sat when working, or the desk at which the Iron Duke was wont to stand. This sort of thing might lead you to wonder where some of the lesser ones work, in short to ponder on the origins of this page. Normally they are ordinary enough, but this week I am sitting in the back seat of a 1927 Rolls-Royce overlooking the Solent, in a storm of wind and rain, tapping at my typewriter while the car rocks in sympathy with the nearby yachts of the really rich as their owners show how tough they can be.

### THE ARCHITECTURE OF SIR EDWIN LUTYENS

IF you have twenty-five guineas to spare, I advise you to have a look at the recently published prospectus of A. S. G. Butler's vast work on the life and architecture of Sir Edwin Lutyens. I can tell you they will need a very large bookcase, for three of the four volumes will measure some 16 x 11ins. A size which allows for adequate photographs and the reproductions of working drawings. The spirit in which these volumes have been compiled can be judged from the opening paragraph of the prospectus. "These four volumes are designed to form a monument more constructive than marble to a supreme artist, the most distinguished of contemporary British architects, and one whom Mr. Winston Churchill has described as a great Englishman. Their purpose is, first to perpetuate the memory of his remarkable personality; secondly, to put on record the nature of his singular and passionate devotion to architecture; and thirdly, to set forth the reasons for considering that Lutyens was, if not one of the greatest architects, as many believe him to have been, then one of the greatest artists in building ever known."

Whether you agree with the writer or not you will probably allow that Lutyens produced some very fine buildings, of which I should put the Viceroy's House, New Delhi, at the top, and some wonderful-to-look-at but highly inconvenient-to-live-in country houses. You will certainly be interested in some of the dimensions on the detail drawing of the Cenotaph, illustrated on the page opposite. You will note that the lines of the vertical sides would meet at *approximately* 1,000ft. from the ground and that the horizontal lines of the sides of the plinth, which measure as little as 6ft. $3^{17}/_{32}$in., are not horizontal at all but convex curves of a radius of 900ft. All jolly subtle but difficult to appreciate as one whisks by on the top of a bus.

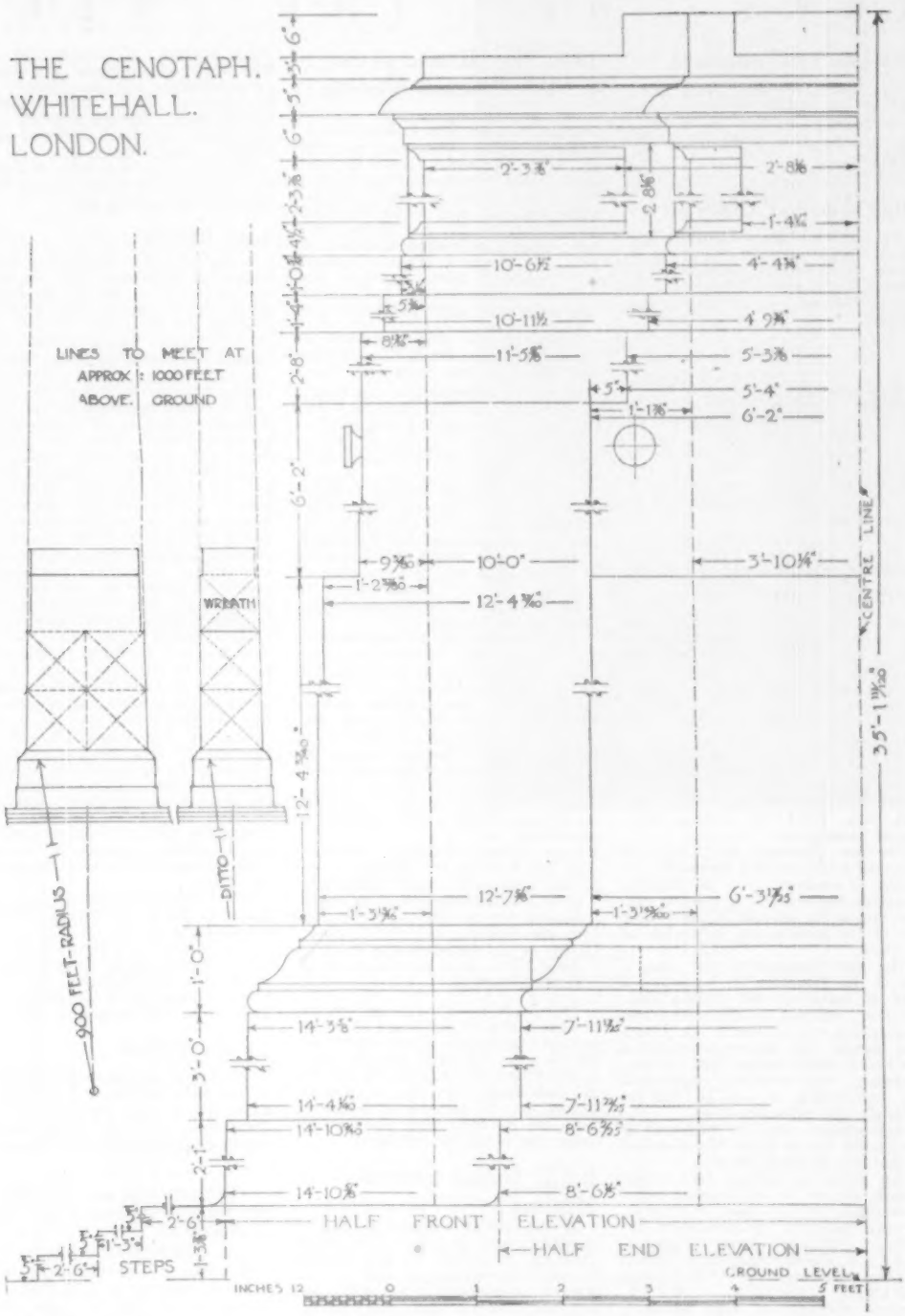
### COLOUR PRINTS FOR SCHOOLS

THE exhibition of colour auto-lithographs at the Building Centre draws attention to this insufficiently well known series. Though originally intended for schools, they are equally suitable for other buildings including the home. Prices are very reasonable and would be even more so were they not subject to a fifty per cent. purchase tax. Twenty-eight subjects by a variety of the best-known contemporary British and Continental artists are available. Unframed the prices vary from 12s. 6d. to 30s. Plain frames can be had for 32s. 6d. each. Prices to educational establishments are somewhat lower. If you cannot afford to buy contemporary paintings you might like one of these.

### BACK TO ADAM

I HAVE received from the M.o.W. a description of the new Embassy in Brazil designed by Mr. Robert R. Prentice and illustrated last week. You may have seen a picture of it. "The design," says the M.o.W., "is traditional and the architect has been influenced by the Adam Brothers" . . . "Internally the treatment and decoration of all the principal rooms is characteristic of the Adam brothers and the marked style of decoration which is known by their name." From the illustrations I have seen Mr. Prentice seems to have made a thorough and scholarly job of it, but I hope he and the M.o.W. will forgive my saying that it makes me want to cry, and I would not be surprised if it makes the Brazilian Government, owners you will remember of the Ministry of Education building in Rio, want to laugh.

ABNER




*Reduced from a plate in Volume III of "The Architecture of Sir Edwin Lutyens," by A. S. G. Butler, and reproduced by courtesy of the publishers, Country Life Limited*

# NEWS OF THE WEEK

## May Lecture Postponed

The Lecture by Ernst May organised by the MARS Group has had to be postponed. It is hoped that it will now be given at the R.I.B.A. on July 27.

## 1951 Festival Church

The Church of St. John in Waterloo Road—almost opposite one of the entrances of the South Bank Exhibition—is being rebuilt and will be used as the Festival Church during the Festival Summer.

*

At a dinner held at Goldsmiths' Hall on Thursday, July 13, the Architecture Club entertained Mr. and Mrs. Frank Lloyd Wright.

Mr. Wright was introduced by the President, Viscount Esher, and was thanked for an eloquent address by Mr. H. S. Goodhart-Rendel and Sir Kenneth Clark.

## County Architects' Society Annual General Meeting

At the Annual General Meeting of the County Architects' Society held in the R.I.B.A. Headquarters on June 15, warm tributes were paid to the work of the retiring officers, namely:

*Retiring President:* C. G. Stillman, F.R.I.B.A., County Architect of Middlesex.

*Retiring Hon. Secretary:* A. G. Chant, F.R.I.B.A., County Architect of Shropshire.

*Retiring Hon. Treasurer:* H. Carr, F.R.I.B.A., F.R.I.C.S., County Architect of Montgomery.

The new President, Mr. Chant, in referring to the retiring President as a tower of strength to the Society, described his work as a massive one, not only in the interests of the Society but of the architectural profession as a whole.

The first President of the Society, Mr. J. H. Haughan, in proposing a vote of thanks to the retiring Hon. Secretary, referred to the careful and painstaking way in which Mr. Chant had nursed the Society, throughout the life of which he had been its Hon. Secretary, and members emphasized the outstanding service he had so willingly and efficiently given.

Appreciation was also expressed of the careful way in which Mr. Carr had guided the Society's finances.

The following officers were unanimously elected for the ensuing year:

*President:* A. G. Chant, F.R.I.B.A., County Architect of Shropshire.

*Vice President:* J. Harrison, A.R.I.B.A., County Architect of Surrey.

*Hon. Secretary:* F. R. Steele, F.R.I.B.A., F.R.I.C.S., M.T.P.I., County Architect of West Sussex.

*Hon. Treasurer and Assistant Secretary:* G. R. Hutton, F.R.I.B.A., F.R.I.C.S., County Architect of Oxfordshire.

## From the Minutes of the R.I.B.A. Council Meeting

At the meeting of the R.I.B.A. Council held on July 4, Mr. John L. Denman, F.S.A., (Brighton), and Mr. G. Grey Wornum, (London), were elected Vice Presidents of the R.I.B.A. Mr. Norval R. Paxton, M.C., (Leeds), Chairman of the Allied Societies' Conference, is also a Vice President, leaving one Vice President to be appointed. Mr. Martin S. Briggs, (London), was appointed Hon. Secretary and Mr. A. Leonard Roberts (Winchester) was appointed Hon. Treasurer.

*Committee to Study Reports of Working Party on the Building Industry and Anglo-American Productivity Team.*

At the same Meeting it was agreed to set up an *ad hoc* committee with the following terms of reference:

(a) To review the reports of the Working Party on the Building Industry and the Anglo-American Productivity Team from the Building Industry with particular reference to matters on which those reports invite the attention of the Architectural Profession.

(b) To give further consideration to the practical side of the architect's training, and to consult with the R.I.B.A. Board of Architectural Education for the purpose.

(c) To consider the particular matters on which H.M. Government have invited action jointly by the professions and the Building Industry, and to hold meetings with representatives of the Royal Institution of Chartered Surveyors, the National Federation of Building Trades Employers and the National Federation of Building Trades Operatives, as appropriate.

(d) To report to the Council on (a), (b) and (c) above and make recommendations on:

(1) any action considered necessary by the R.I.B.A. individually;

(2) any action considered necessary by the R.I.B.A. jointly with other organisations representing the professions or the Building Industry;

(3) any advice that should be given by the R.I.B.A. as to needful action by H.M. Government.

The R.I.B.A. Council, on the recommendation of the Board of Architectural Education, have recognised the five years' full-time Diploma Course in the School of Architecture, Schools of Technology, Art and Commerce, Oxford, for the purpose of exemption from the R.I.B.A. Final Examination under the usual conditions.

## B.S.I. Annual General Meeting

At the Annual General Meeting of the B.S.I., held on July 11, Mr. Roger Duncalfe, Chairman of the General Council, in presenting the Annual Report, explained that the work had expanded during the year in all sections, both nationally and internationally. The B.S.I. had distributed nearly three quarters of a million copies of British Standards, many of them volumes of considerable size. The B.S.I. had participated in a number of exhibitions, and the Library and Information Service had developed substantially. He pointed out that the Library now holds copies of about 43,000 oversea standards.

The Rt. Hon. Sir John Anderson, P.C., G.C.B., F.R.S. was elected President for the coming year.

## Law Report

A dispute in the Incorporated Association of Architects and Surveyors was mentioned to Mr. Justice Danckwerts last week in the Chancery Division.

Mr. Denis Burke-Collis, Mr. Dugald Laird Hair, Mr. Arthur Edward Thornton-Firkin and Mr. Arthur Cyril Williamson, on behalf of themselves and all other members of the Incorporated Association of Architects and Surveyors other than the personal defendants, in an action against the Association and Mr. E. Sinclair Brown and 38 other personal defendants, asked, by motion, for injunctions restraining the personal defendants from acting as members of the Council—the managing body of the Association—and, alternatively, restraining the Association from acting on any resolution passed at any meeting of the personal defendants acting as the Council.

Mr. Lionel Edwards, for the plaintiffs, said the basis of the claim was that the elections to the Council were *ultra vires* the Articles of Association and the by-laws made thereunder. Mr. Raymond Jennings, K.C., who represented the Association, was not prepared to give any formal undertaking but he would give an assurance that the Association would not, pending an adjournment, hold any meetings of the Council or of any committees except to transact matters in the ordinary course of business.

The Judge: Somebody must carry on affairs.

Mr. Edwards: I entirely appreciate that. The day to day business must be carried on.

Mr. Raymond Jennings, K.C., said the Association took the view that the action was misconceived.

His lordship stood the motion over by consent, until Tuesday, July 25.

## Crystal Palace

The L.C.C. is to promote legislation in the next session of Parliament to have the Crystal Palace and park transferred from the Crystal Palace trustees and vested in the Council.

### OBITUARY

The death occurred on July 2, of Mr. James Wright, registered architect, of Stirling.

### CORRECTIONS

The date of the discussion at the R.I.B.A. reported in A. & B.N. 7.7.50 was given as May 2! As readers have pointed out, the actual date was June 20! In last week's Leader, "white test" glass should have been "whitest" glass.

# FOUR SCHOOLS FOR THE LANCASHIRE COUNTY COUNCIL

*designed by the County Architect's Department*

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•

## 1. Litherland 3-Form Entry Secondary Modern School For Girls

This school started in March 1947 and was completed in February 1950, and was the first post-war school to be completed for the Lancashire County Council. It is designed to accommodate 510 pupils including 6th Form pupils.

So that an immediate start could be made, a fixed fee form of contract was adopted and the work was carried out in two phases. The first phase was completed in April 1948 and provided accommodation for 270 pupils, and this necessitated the provision of temporary staff room, lavatory and boiler house accommodation.

The site is level and covers 27.8 acres and is situated on the fringe of a post-war housing scheme near Liverpool.

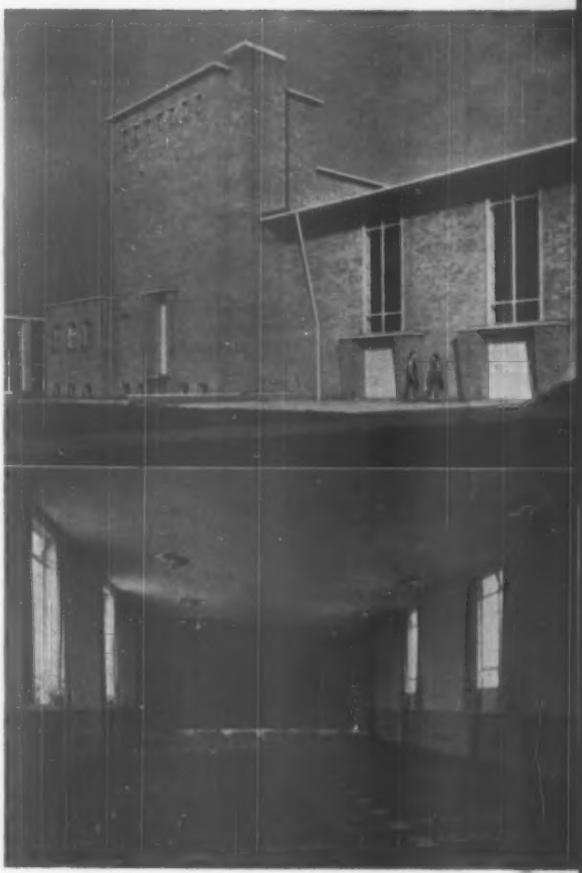
The opportunity was taken, on this the first major post-war school, to experiment with different forms of construction, for instance, six different types of suspended ceiling were tried out.

A number of selected flowering and ornamental trees and shrubs have been planted and provision is made for eight hockey pitches, eight hard tennis courts, cricket pitch, running track and two acres of ground have been prepared for school gardens.

### PLANNING

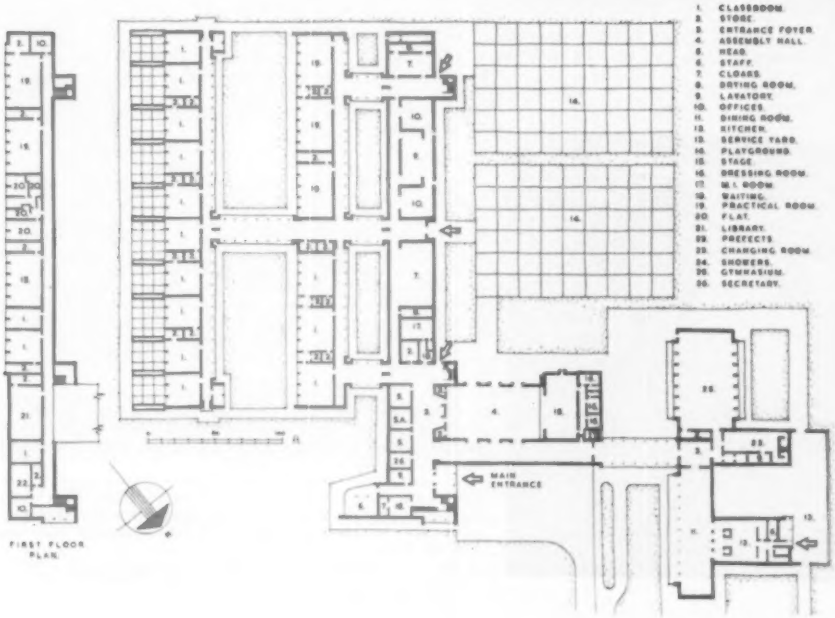
The school is sited in the north corner of the site to give easy access off Sterrix Lane. All classrooms face south-east.

The general classrooms are housed in a separate wing and the practical rooms are grouped in two wings, one on the ground floor and one over the cloakrooms and lavatories on the first floor. The Gymnasium, Dining Room and Kitchen are linked with the Assembly Hall by a covered



*Above : Assembly Hall and Tower from S.W.*

*Below : Interior of Assembly Hall.*




FIRST FLOOR PLAN.

*Main Staircase Window*

way, and this group of rooms can be isolated from the remainder of the building so that they can be used for evening community activities.

The stage is fully equipped and has male and female dressing rooms and lavatories adjoining.

*The Art Room*

## CONSTRUCTION

*Structure:* Rolled steel frame. *Walls:* 4½" facing brick outer skin, cavity, 2½" hollow tile blocks *Suspended Floors:* generally precast concrete. *Roofs:* aluminium and steel decking and in situ reinforced concrete. Fascias are of aluminium sheeting.

## FINISHES

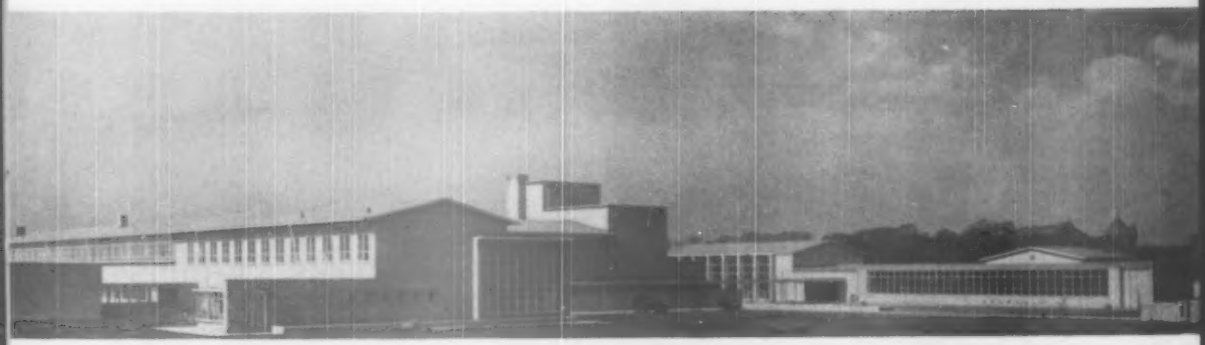
*Externally:* Proctor & Lavender 2⅝" sand faced hand-made golden brown facing bricks with artificial stone sills, surrounds and copings. Windows: steel. *Internally:* Walls—generally plastered, with cement glazed dado to corridors, lavatories and cloakrooms. Floors—general classrooms: Semtex flooring; adjoining corridors: linoleum; practical rooms and adjoining corridors on ground floor: asphalte; practical rooms and adjoining corridors on first floor: "Accotile"; Library—rubber tiles; entrance hall and lavatories: terrazzo tiles; assembly hall: wood blocks. Gymnasium: wood strip; kitchen and dining room: asphalte.

## SERVICES

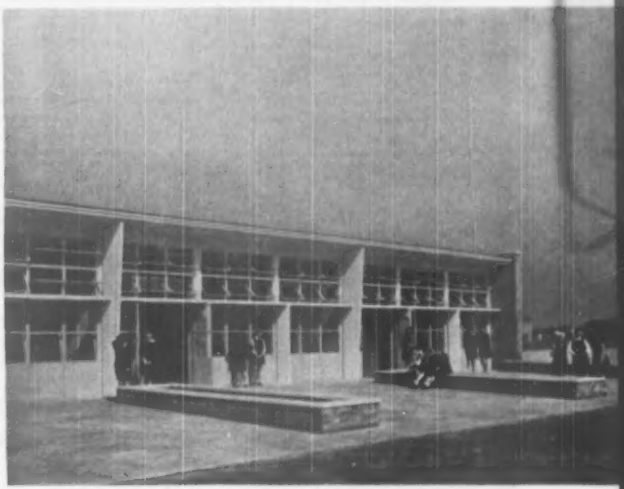
*Electrical*—Generally tungsten lighting with eggcrate laylights to first floor practical rooms. Special lighting to stage. Radio diffusion system, clocks, period changing bells and alarm bells are installed.

*Heating*—Low pressure hot water with oil-fired boilers electrically controlled. Horizontal service floor ducts under corridors provide easy access to service mains. Recessed convectors are provided in the Foyer, Assembly Hall and Dining Room.

*General Contractor:* Messrs. Wm. Tomkinson & Son Ltd., Liverpool.

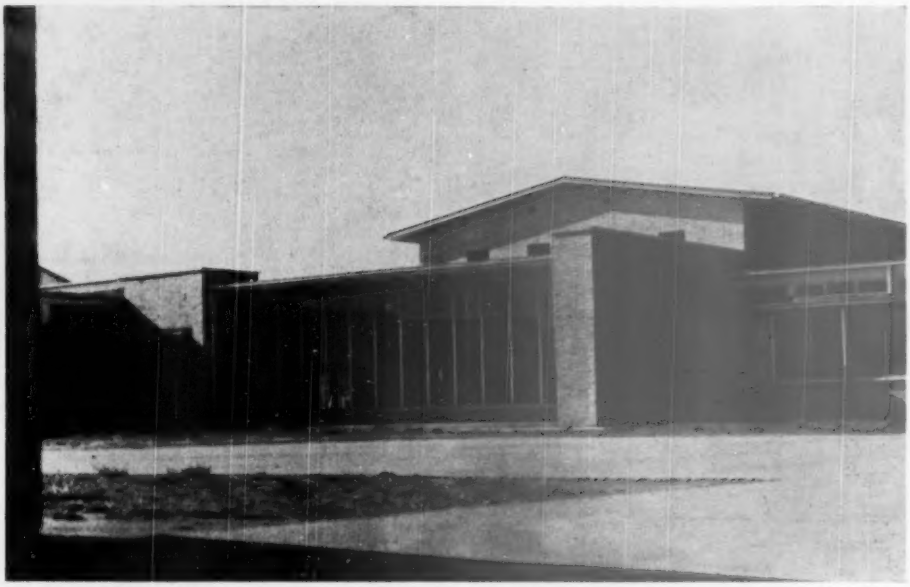


General View from the East

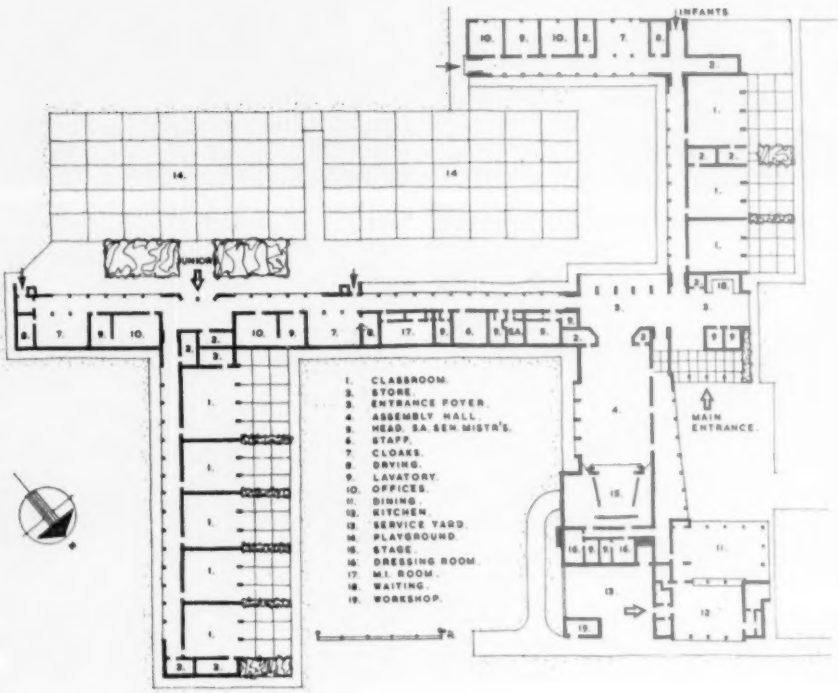


- Main Entrance
- Two-storey block from South
- Two-storey block from West
- Part of Classroom block

LITHERLAND SECONDARY MODERN SCHOOL FOR GIRLS

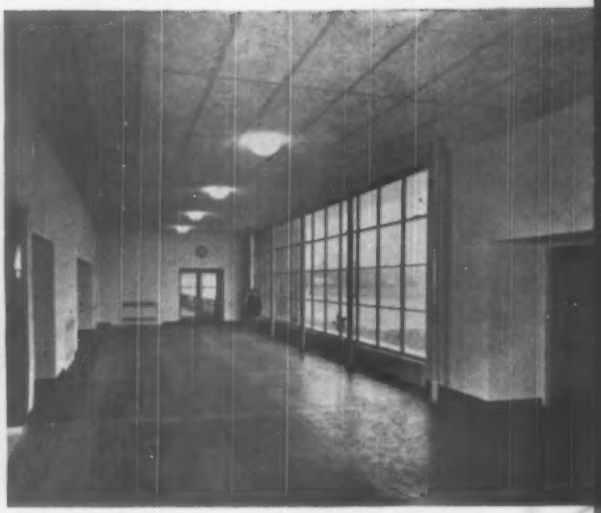


*View from the South-west showing Foyer Window.*




MAGHULL JUNIORS' AND INFANTS' SCHOOL

An Infants' Classroom.



The Entrance Foyer.

## II. Maghull Single-Form Entry Junior and Infants' School

### GENERAL

This school is planned to accommodate 200 Juniors and 120 Infants. Work commenced on the site in January 1948, the Infants' Wing was occupied in May 1949 and the Junior Wing in September 1949. It is anticipated that the remaining portion of the school, consisting of Assembly Hall, Kitchen and Dining Room will be completed at the end of August 1950. In order that all the teaching space could be occupied as soon as possible, it was necessary to construct a temporary boiler house.

The site is a level one of eight acres and is flanked on the south east side by the main Preston to Liverpool railway line. The remainder of the site is surrounded by semi-detached houses.

### PLANNING

The Infant and Junior Departments are planned as separate wings each side of the Assembly Hall with the lavatory accommodation overlooking the playground areas. This allows of easy access to the lavatories during playtime, and the lavatories and corridors form a useful noise barrier between classrooms and playgrounds.

The Assembly Hall, Dining Room and Kitchen have been specially grouped so that they can be isolated from the remainder of the school for evening community activities. The stage will be provided with dressing rooms and lavatory accommodation. Provision is also made for a projection room for showing films.

### CONSTRUCTION

*Structure:* Rolled steel frame with metal windows tapped and screwed to the stanchions. *Walls:* 4½" facing brick outer skin, cavity, and 2½ Hollow Tile inner skin. *Floors:* Reinforced concrete. *Roofs:* Asbestos decking except Assembly Hall which is wood wool covered with bituminous felt.

### FINISHES

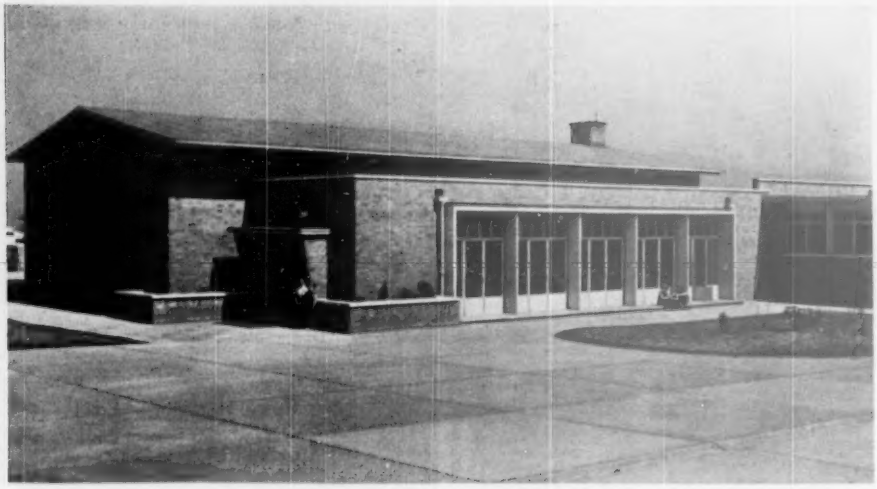
*Externally:* 2½" Ravenhead golden brown facings. Sills, copings and surrounds in artificial stone. Metal windows. Aluminium purpose made fascias.

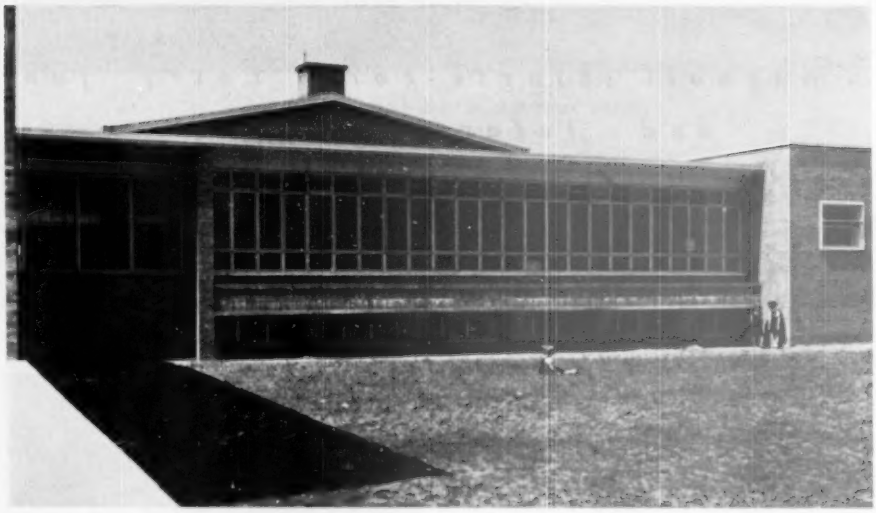
*Internally:* Walls generally plastered. Floors: Classrooms—"Aranbee" composition. Corridors—"Accotile" Assembly Hall—wood block, Kitchen—Asphalte—Staff Rooms—Granwood, Lavatories & Cloaks—Quarry tiles.

### SERVICES

*Electrical.* Tungsten lighting. Radio, clocks, period changing bells and alarm bells are being installed. *Heating.* Low pressure hot water with oil fired boilers electrically controlled. Horizontal service ducts provide ready access to service mains. Recessed convectors are being provided in the Foyer, Assembly Hall and Dining Room.

*General Contractors*: Messrs. Tysons (Contractors) Ltd., Liverpool.





*Above: Main Entrance and Assembly Hall.* *Below: The Dining Room from S.E.*

## III. Orrell Lamberhead Green 2-Form Entry Infants' School

This is a two-form entry Infants' School which has been built to accommodate 280 children from a new housing estate. The site is 4.78 acres in extent and slopes rather steeply to the south-east and is flanked by prefabricated housing on the north-east side. The ground is subject to mining subsidence necessitating heavily reinforced concrete foundations. Work was started in February 1948 and the school was completed in March 1950.

### PLANNING

The buildings have been sited on the west side of the site so as to keep the access road as short as possible, and it is also the highest and most level portion of the site.

The classrooms are of the "elbow" access type and are joined by link corridors to the lavatory block which runs parallel to the classrooms.

There are three separate entrances for the pupils and the main entrance is in the form of an Exhibition Hall.

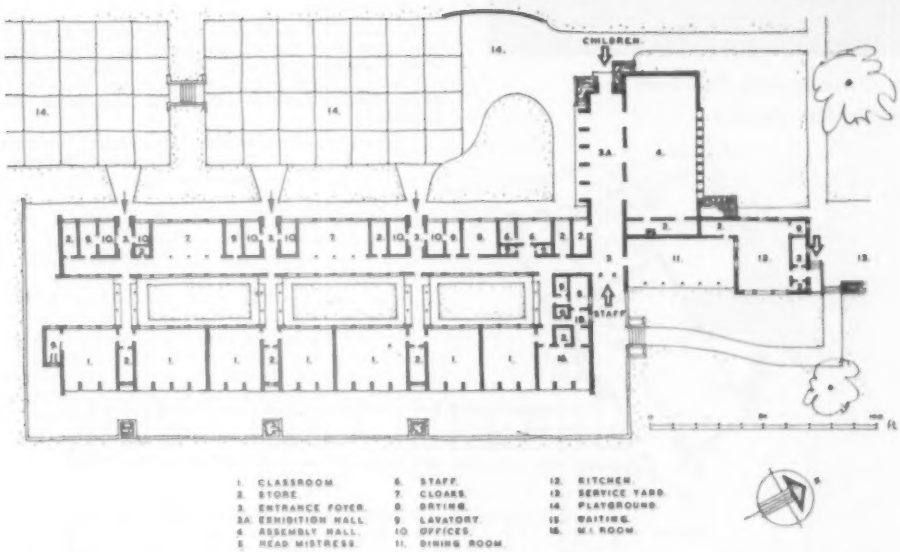
In accordance with the Ministry of Education policy there is no fixed stage in the Assembly Hall.

The Kitchen, Dining Hall and Assembly Hall have been grouped so that they may, if desired, be used for local functions.

### CONSTRUCTION

*Foundations:* Reinforced concrete floors and wall beams. *Superstructure:* Rolled steel frame, the channel stanchions forming mullions to windows. *Roof:* Aluminium decking insulated with ½" fibre board and covered with 2-ply felt, except Kitchen roof which is asbestos decking. The aluminium fascias are purpose made.

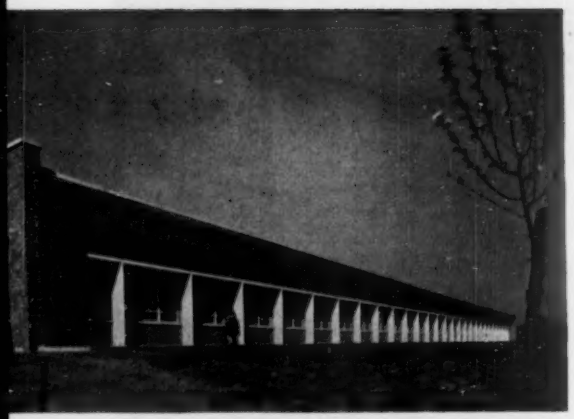
*One of the classrooms.*

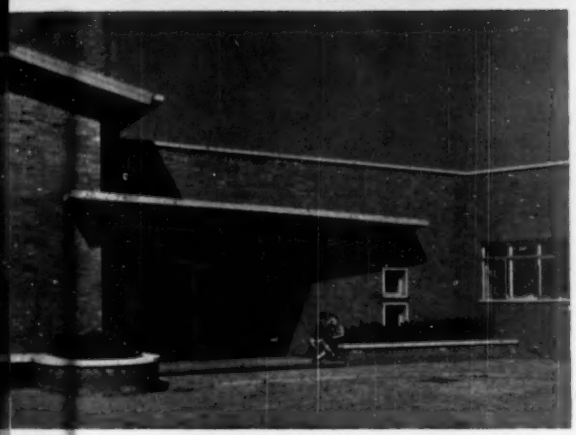



## FINISHES

*Externally:* 2½" Ravenhead golden brown facing bricks with artificial stone sills, copings and window surrounds.
*Windows:* Aluminium.
*Internally:* Walls: are generally plastered. Floors: Classrooms "Aranbee" Composition flooring; Corridors "Flexicrete"; Kitchen & Lavatories, Asphalte; Entrance Hall, Linoleum.

*General Contractors:* Messrs. W. J. Bickerstaff & Sons, Wigan.





Above: Classroom block from South

Below: The Main Entrance

## IV. Prestwich Butterstile Lane 1-Form Entry Junior and Infants' School

This one-form entry school provides accommodation for 160 Juniors and 120 Infants. The site is 3.25 acres in extent and is completely enclosed by houses. Considerable difficulties had to be overcome as the site slopes very steeply to the south: this entailed the removal of some 8,000 tons of soil to form a level area for the school and playground. In addition, the trial holes showed the presence of patches of peat and running water at five feet, which necessitated heavily reinforced foundations, and the terrace is supported on reinforced concrete cantilever beams to prevent sliding. In order to avoid delay in starting this school the foundation work was carried out under a separate contract. The main access to the school is at the lower part of the site off School Grove and there is an alternative entrance at the higher end off Sandy Lane.

### PLANNING

The classrooms are of the elbow access type giving a high daylight intensity and good ventilation. The courts are accessible to the children and one contains a sand pit. The lavatory block which runs parallel to the Classrooms is readily accessible to the playground and forms a useful noise screen to the classrooms.

The Assembly Hall, Kitchen and Dining Room can be isolated from the teaching area and are made available for social activities in the evenings.

The main entrance is approached by a steeply rising roadway and the main entrance leads into a foyer which is designed for exhibition purposes. There are three principal entrances for the children at the rear of the school.

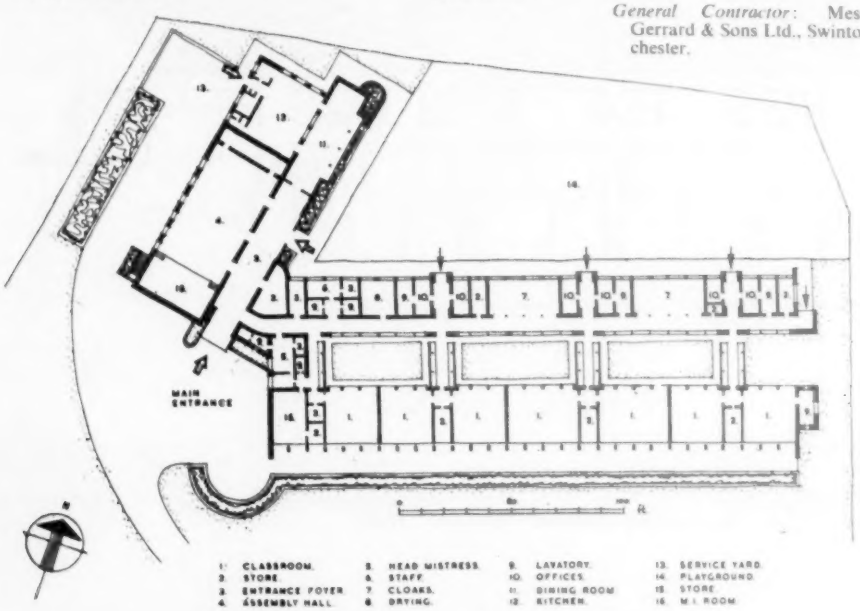
### CONSTRUCTION

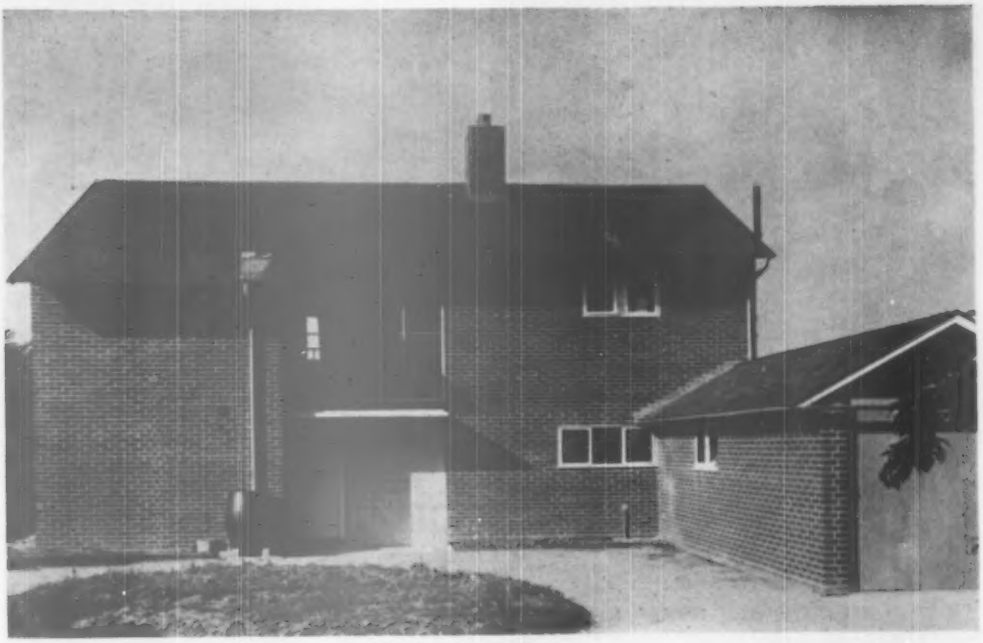
*Foundations:* Reinforced wall beams with mushroom based piles. *Structure:* Rolled steel frame except Assembly Hall which is load bearing brickwork. *Walls:* 4½" facing brick outer skin, cavity, 2½" hollow tile inner skin. *Floors:* Reinforced concrete with precast concrete units over ducts. *Roof:* Aluminium decking covered with ½" fibreboard and bituminous felt. Kitchen asbestos decking covered with bituminous felt.

### FINISHES

*Externally:* 2½" Ravenhead Golden Brown Facing Bricks. Sills, surrounds and copings—artificial stone. *Internally:* Walls—generally plastered. Floors—Assembly Hall, Classrooms and Dining Rooms and Corridors—"Aranbee" Composite Flooring. Lavatories & Cloaks: Terrazzo tile. Kitchen: Asphalte.

*General Contractor:* Messrs. J. Gerrard & Sons Ltd., Swinton, Manchester.



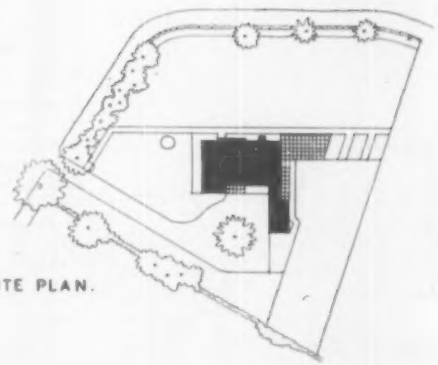


The entrance front facing north-east

# HOUSE AT NO. 1 THE GREEN, EWELL

architect: P. H. LAURENCE, A.R.I.B.A.

THE original house on this site was totally destroyed by enemy action. To rebuild the house in its original form would have cost considerably more than the ceiling price for rebuilding war damaged houses, which was £3,000 at the time of reconstruction. It was for this reason, therefore, that a new plan was decided upon with less total floor area and cubic capacity. In preparing the new plan advantage was taken of locating the drive and entrance to the house on the north-eastern side in order to allow the maximum frontage on the south side for all habitable rooms. In the original house the entrance was on the south-west side. The addition of the garage was authorised after building had begun and when the "ceiling" was raised to £5,000. Total floor area inside the main external walls is 1,625 sq. ft. External stores and garage are an additional 155 sq. ft. The original contract figure including site preparations and removing house foundations was £3,268. Extended contract price which included garage, partial central heating, different floor finishes and external works amounted to £3,940.

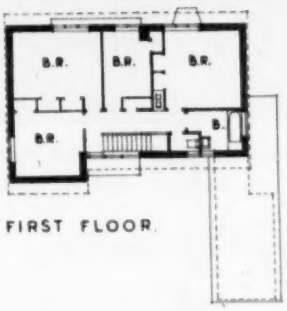


SITE PLAN.

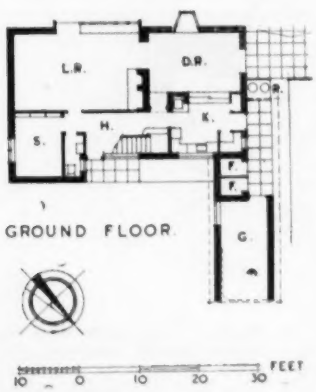
## CONSTRUCTION

Walls: external—11 in. cavity brick, outer skin of Hammill multi-red facings; internal—4½ in. brick, 3 in. molar and 2 in. breeze. Floors: ground—6 in. concrete slab on hardcore, waterproof membrane and screed for floor finishes; first—8 in., 6 in. and 5 in. by 2 in. joists. Roofs: 4 in. by 2 in. rafters, collars,

*The garden front of the house from south. Surround to the living room window is precast concrete and the brick wall below the sill is tiled*




FIRST FLOOR




GROUND FLOOR




*ties, runners and ceiling joists framed to form 30 deg. pitch with 1 ft. 9 in. open eaves. Doors—flush panelled semi-cored, projecting linings, no architraves. Windows—E.J.M.A., except living and dining rooms and stair window, which are purpose-made in wood. Stairs—in oak and with open treads (ex 1½ in.) and balusters, waxed and polished. Two-way fitment in deal, painted light salmon colour with cupboards, drawers and sliding glass doors for access from either side.*

FINISHES

*Walls—⅛ in. plaster, white tiled dado in bathroom and kitchen. Pastel blue frost-proof tiles adjoining front door and living room window panels. Floors: ground—12 in. square cork tiles in Study, Living and Dining Rooms, with 3 in. oak skirtings. Quarry tiles and skirting in Hall and Cloaks. Durafloor patent composition in Kitchen with cove skirting. First—1 in. tongued and grooved boarding with 3 in. oak skirting. Sills—9 in. square quarry and glazed white tile. Roofs—Canadian cedarwood shingles. Colour—all woodwork internally and externally painted gloss white and cream, except stair window in pastel blue to match tiles and garage doors in French grey. All internal walls and ceilings distempered off-white. All external guttering and down pipes in French grey. Tubular supports to covered way in canary yellow.*

SERVICES

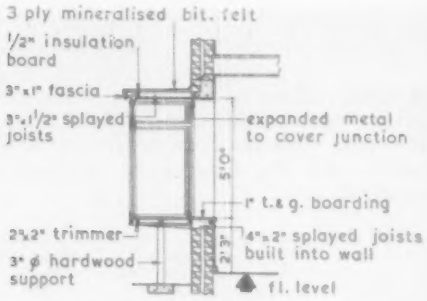
*These include hot water and heating provided by Ideal domestic boiler, 3 radiators, sink, bath and two wash basins. In addition, all rooms except the living room have electric fires. Cooking is by gas.*

*Quantity Surveyors:* Mackmin & Saunders

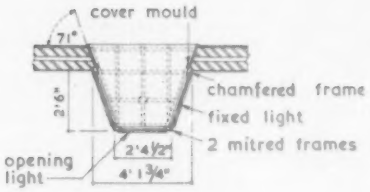
*General Contractors:* H. H. & F. Roll Ltd.

SUPPLIERS AND SUB-CONTRACTORS:

*Bricks, Facing*—Hammill Brick Co. Ltd. *Cork Floors*—Mundet Cork Products Ltd. *Electrical Fittings*—Troughton & Young Ltd. *Roofs*—W. H. Colt (London) Ltd. *Wall Tiling*—Carter & Company, London, Ltd.




SECTION




PLAN

*Oriel window in the dining room; Plan and section are shown on the left*

*Right: The living room fireplace. In the background can be seen the two-way fitting in the dining room.*

HOUSE

AT

EWELL

architect:

P. H. LAURENCE

A.R.I.B.A.

# HOUSING FOR LLANRWST U.D.C.

***The Ministry of Health Bronze Medal for the best Urban Housing Scheme in Wales over the period 1945-1949 has been awarded to S. Colwyn Foulkes, M.Arch., F.R.I.B.A., for his housing for Llanrwst Urban District Council. Mr. Colwyn Foulkes' Report to the Awards Committee refers to the scheme illustrated and his housing at Beaumaris, Anglesey, which was illustrated in A. & B. N., November 4, 1949.***

THE schemes have been executed in accordance with the original designs—there have been no modifications.

There are, however, certain conclusions and a few general reflections on our particular problem in Wales which I should like to put on record, together with several considerations which have influenced the design.

* * *

In Wales almost invariably we have to build on a hill. The conventional pairs of houses with 12 ft. between are consequently inordinately expensive in foundations, and a satisfactory grouping of the individual units, when separated in pairs, is almost impossible.

In brief, a house and a layout suitable for the flat counties of England are inappropriate to the conditions encountered in Wales.

To meet these conditions it is necessary to design a type of house which can be built to climb up a hill with the very minimum of foundations. If this can be done, sites, which by reason of their steep contour might be rejected, could then be used.

In this scheme I have faced and endeavoured to solve five problems:

(a) How to build the small house on a hill with foundation costs little more than a flat site.

(b) How best, in exposed positions encountered in Wales, to keep the small house warm.

(c) How best to equip the kitchen with superior equipment and fittings within the price allowed by the Ministry of Health.

(d) How best to compose the whole on a hilly site.

We go a long way to answering these four questions if we build in a row, but we cannot build in a row without a back road or alternatively, a passage through every other house to the back.

Both alternatives are expensive to build and thereafter to maintain.

To achieve solutions to the first four questions we have therefore to resolve a fifth problem:

(e) How to build in a row without a back road or passage through each alternate house.

The solution to this last problem, as here evolved, is an innovation. I believe it is the first time it has been done.

It is very simple. There are two doors in the covered porch, one for the coalman and the children with their dirty boots, and the front door into the hall for the Vicar and the visitor. Dustmen collect the bin (which is out of sight) from the sunk, covered recess screened by the low stone wall. Twelve months' experience show this solution to be entirely satisfactory.

## (A). BUILDING ON A HILL.

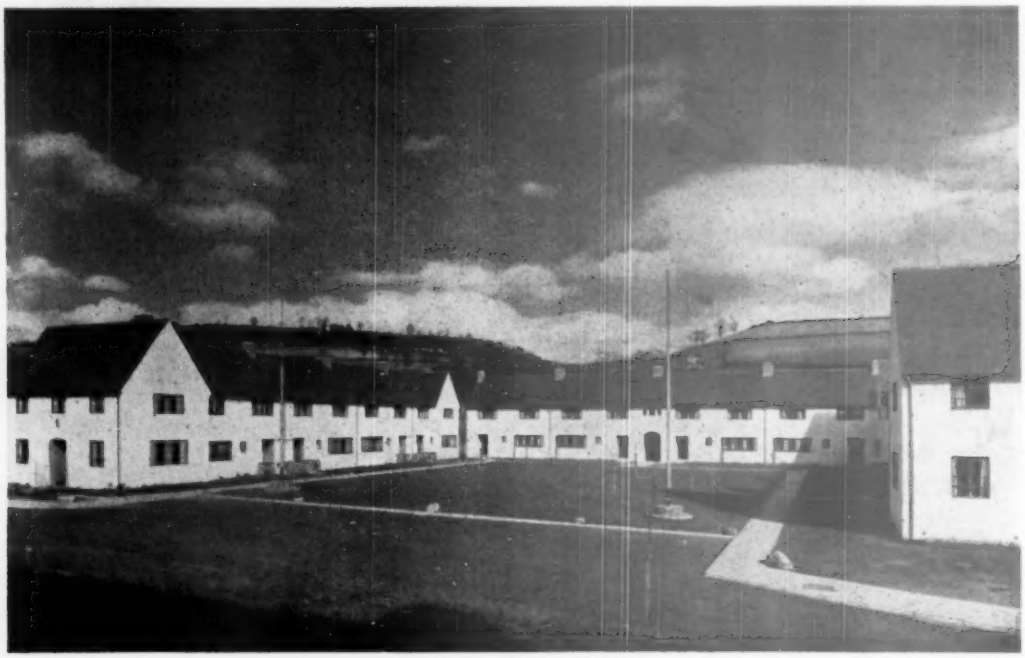
The solution lies in the traditional Welsh method; dig into the hillside for half the house and carefully plan on this. The type here evolved, by reversing, will go up hill or down dale. In some cases the slope is 1 in 10 and foundation costs are little more than a flat site. (i.e. 6 yards of 9" brickwork).

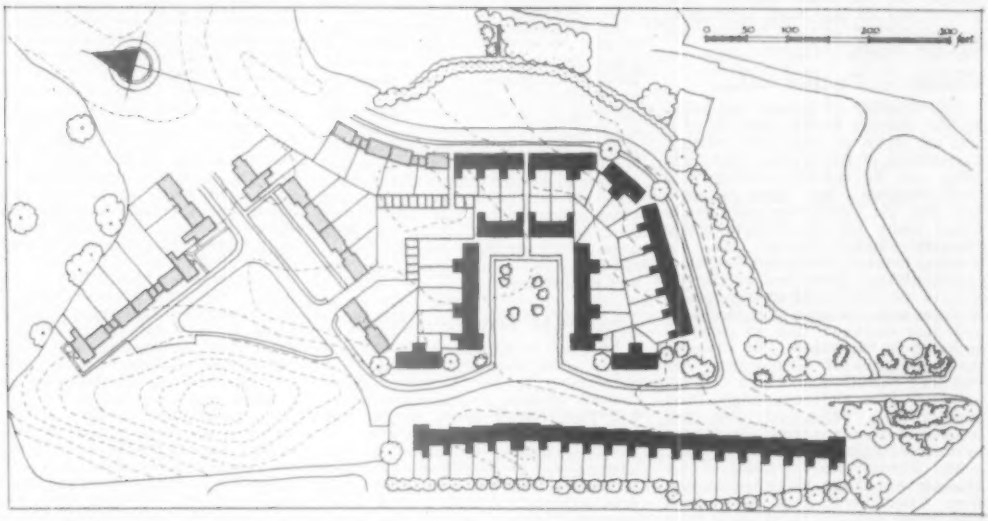
The moral is that we ought not to be afraid of our hills. We should welcome them and evolve our types to conform to the physical conditions.

## (B). WARMTH.

Building in a row is a major contribution to the warmth of the house. There are only two walls exposed instead of three. Built in a row the houses keep each other warm.

All houses are equipped with heat storage cookers. They do the cooking and supply ample hot water for 5s. per week, and since they are continuously burning night and day, they supply also that essential background heat to the






HOUSING FOR LLANRWST U.D.C. ARCHITECT : S. COLWYN FOULKES

whole house and to a drying cupboard for wet clothes.

(C). EQUIPMENT

This expensive cooker, the stainless steel sink, the glazed china cupboards, tiling, etc., is made possible only by savings in the structure.

1. By building in a row we save a party wall every other house.

2. We reduce the brickwork in foundations to little more than a flat site.

3. In the small house, the rooms are of necessity, small. If these small rooms are to be agreeable in proportion, careful thought must be given to the headroom. I believe that 7′ 6″ is the right height; the regulations call for 8′ 0″.

Believing this I took a chance and a great responsibility and broke the regulations because I am of opinion that it is stupid to ruin the proportions of a small room by making it too high merely to comply with a regulation. Moreover, there is this much less area to decorate, maintain and heat.

I have therefore saved 1′ 0″ in the height of each house and gained a better proportion outside and inside. All these structure savings have gone into adequate and better equipment which is so important to the housewife.

(D). HOW BEST TO COMPOSE ON A HILLY SITE.

The first maxim is to accept the contours absolutely.

I have not been able to find any way of composing satisfactorily on steep contours except in grouping the units together in a series of terraces.

A close study of the contours of a hilly site will reveal quite unexpected and exciting opportunities of composition; of contrasting the dynamic with the static.

If we surrender absolutely to the physical conditions and work within these limitations, nature comes to our aid and adds her contribution in quite unexpected ways.

Our peasant forefathers understood this better than we do, they were closer to nature. Their resources were strictly limited, consequently they had to think. It was a question of the simplest means to the end in view. These early Welsh cottages snuggle into the hillsides as naturally as a bird's nest, and are invariably right. They constitute the only essential Welsh tradition.

In this scheme I have endeavoured to pick up that tradition and adapt it to the larger scale and modern needs of to-day.

Our aim should be the evolution of an essentially Welsh house fitted completely to our physical conditions. It will be quite different to a house in Kent.

# IN PARLIAMENT

## Three Years' Building

Mr. Prescott asked the Minister of Works what was the total figure, respectively, for licences issued for industrial, office and housing development since 1945, and what proportions were attributable to development on war damage sites. Mr. Stokes replied that the figures since 1945 were not available, but for the period March 1947 to May 1950 inclusive the figures were:-

New industrial work - £338 million
New offices - £25 million
New private housing - £115 million

In addition to the £115 million of new housing work licensed, it was estimated that approvals for new housing work to be carried out by Local Authorities and Government Departments amounted to about £650 million in the same period. The proportions of this work attributable to development on war damage sites was not known. (July 10).

## Overtime Committees

The Minister of Labour was asked by Mr. Robson Brown (July 13) what was the status of local joint overtime Committees of the building trade, and what was the statutory authority of their decisions. Mr. Isaacs informed him that the Committees were established under the constitution of the National Joint Council for the building industry, which was the voluntary machinery established by the two sides of the industry for the negotiation of wages and conditions of employment, and their decisions had no statutory authority in themselves. By virtue of the Conditions of Employment and National Arbitration Order (1940), however, these decisions might form part of the "recognised terms and conditions of employment" which must be observed under Part III of that order.

Mr. Robson Brown asked if the Minister would use his influence with these Committees, and with both sides in the industry, to persuade them to undertake overtime on house building, so that a quicker rate of building could be achieved. Mr. Isaacs replied that, except for a recent case which was advertised widely, and misunderstood, a considerable amount of overtime was worked.

## Fareham Oil Refinery

Mr. Dalton, Minister of Town and Country Planning, stated in reply to Surgeon Lieut.-Commander Bennett (July 11) that the Government had approved in principle the project for an oil refinery in the Brownwich and Hook Park areas of Fareham since they were advised that this locality offered convenient access by water for large tankers and was well placed for the main markets. It would cost much less to build and operate a refinery there than elsewhere. Most of the labour would be drawn from neighbouring towns and there was no intention of creating a new township.

Lieut.-Commander Bennett said that to put the refinery on that site would mean that the strawberry growing areas in Hampshire —which were dead to windward— might well get a covering of oil which would cause the collapse of the industry. Sir G. Jeffreys said that the Solent would be a film of oil, and that the oil would be carried by the tide up the Hamble river and greatly damage the yachting centre. Mr. Dalton said that if they gave him some particular evidence against this site he would go into it, but the evidence in favour of the site was very strong.

## Late War Damage Claims

Members of all parties joined in an appeal to the Government on July 11, to authorise a further review of claims for war damage compensation which had been turned down by the War Damage Commission because of too late notification. Sir Stafford Cripps, Chancellor of the Exchequer, replying to the debate, said the Commission had done immensely difficult work with the greatest efficiency, and on the whole with great humanity. Receipts from the war damage scheme amounted to £200 millions. They had so far paid out £900 millions, and this year would pay out another £75 millions—a total of something like £90 for every family in the country. It was impossible to adopt the suggestion that local authority records should be accepted as a notification. If that were done a great many people would suffer because there were no records. Some local authority records were concise, and others conveyed nothing. These records could be used, as the Commission used them, to confirm or otherwise claims that were put in, but they could not possibly be substituted for the notification required in the Regulations.

The matter had been frequently gone into, and he had himself looked at it three or four times to see whether it was desirable or possible to make any substantial change. Now, five years since the last bomb damage could have occurred, the Commission was still accepting late notifications, where there was some acceptable reason for the extraordinary delay, and where there was substantial structural damage still unrepaired which was agreed to be, or admitted to be, or found by the Commission to be war damage. During the six months ended June 30, some 1,200 to 1,300 new notifications were accepted in whole or in part. Some day that process must come to an end. Before too long they would have to fix a definite date and say "no more claims at all", and they would have to give proper notice before that was done. The only area in which the War Damage Commission might be asked to look into the possibility of some small alleviation was in the special class of cases, where the reason for the delay was quite exceptional, in which they could accept notification for non-structural damage; not with a view to any broad or wide extension, because that would let in a flood of new claims, many false, and many impossible to check, but to see whether there were any individual cases where this principle could be applied and some slight alleviation granted where they had held rigidly hitherto that they could not be admitted.

# CURRENT MEASURED RATES (LONDON)

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**These apply to new work of normal character and some size. The rates are for time and materials only, and carry 10 per cent in excess, so the appropriate essential on-costs should be added. The basis cost of material used in the calculation of these prices is taken from the foregoing table.**

## ESSENTIAL ON-COSTS

Fees payable to the London County Council in respect of services rendered by the District Surveyor :

| | |
|---|---|
| For new buildings of ordinary construction exceeding 5,000 cubic feet, for every 1,000 feet or part of same up to 1,000,000 cubic feet 1*s.* 6*d.*, together with an additional sum of £1 10*s.* | £1 10 *at* + 1/6 |
| After which allow per 1,000 do. | *at* +9*d.* |
| *For alterations and additions* : | |
| When £100 the sum of £2 10*s.*, and a further 12*s.* 6*d.* for every £100 or part of same beyond, up to £1,000 | £2 10*s.* *at* +12*s.* 6*d.* per 100 |
| When over £1,000 the sum of £8 2*s.* 6*d.*, and for every £100 or part of same beyond 3*s.* | £8 2*s.* 6*d.* *at* +3*s.* per 100 |
| Fees in respect of public buildings are as above but but with fifty per centum added | +50% |
| Fees in respect of means of escape in case of fire are 1/5th of the above or the sum of £2 if greater or in the case of a one-storey building £1 | 1/5th |
| Steel framed or reinforced concrete buildings carry a fee of twice times the above | × 2 |

| | |
|---|---|
| Allow for Unemployment and Public Health, Holidays with Pay Scheme, Workmen's Compensation, Third Party Risk, Welfare, Travelling and Guaranteed Week over the total contract cost of builder's own work | 6% |
| Allow for Fire Insurance do. | ½% |
| Allow for Water for use on the works and apparatus do. | ½% |
| Allow for hoarding, gantry or similar licences in the City of London | say £10 |
| Do. under Borough Councils per ex month | say 2/6 |
| Allow for Office, Fire, Attendance on Clerk of Works, etc., per week | say £1 |

| Supervision, etc. assessment Contract value | £4,000 | £6,000 | £12,000 | £24,000 | £50,000 |
|---|---|---|---|---|---|
| Cost of administration | 6% | 5% | 5% | 4½% | 4½% |
| Agent or foreman (each) | 5% | 4½% | 3½% | 2½% | 1½% |
| Timekeeper or Watchman (each) | 2½% | 2½% | 1½% | 1% | ¾% |

## SPOT ITEMS AND DEMOLITION, ETC.

| | |
|---|---|
| | Per foot run |
| Hoarding erected and removed | 7/- |
| Planked gangway with handrail, etc. do. | 6/6 |
| Proper gantry, do. | 60/- |
| Sleeper roadways | 7/6 |
| | Per foot cube |
| Needling, strutting and shoring including all labours and use and waste in erection and removal | 10/- |
| | Per yard cube |
| Breaking up and removing hard masses of concrete or brickwork, work, etc., found in foundations | 50/- |

| ALTERATION-DEMOLITION— | Per foot super 1 Brick | 1½ Brick | 2 Brick | Per yard Cube |
|---|---|---|---|---|
| Cutting out cement concrete or brickwork in small quantities | 9*d.* | 1/1½ | 1/6 | 27/- |
| Do. if either in very small quantities or reinforced | 1/6 | 2/3 | 3/- | 54/- |
| Debris filled into baskets and removed from inside to outside of building | 3½*d.* | 5½*d.* | 7½*d.* | 10/6 |

## SCAFFOLDING

| | Per Yard superficial Period— 1 month. | 3 months. | 5 months |
|---|---|---|---|
| Putlog type—4′ 6″ lift | 3/4 | 5/2 | 7/- |
| Do. — 6′ 0″ do. | 2/8 | 4/2 | 5/8 |
| Independent type—4′ 6″ lift | 4/5 | 7/2 | 9/11 |
| Do. — 6′ 0″ do. | 3/5 | 5/6 | 7/7 |

## EXCAVATION

| | Per Yard Cube Easy sand. | Normal ground. | Fairly hard. |
|---|---|---|---|
| By hand;: reduce levels and get out | 3/6 | 5/- | 6/3 |
| Do.: surface trenches and do. | 5/9 | 8/6 | 10/6 |
| Barrowing for 25 yards | 1/8 | 1/11 | 2/2 |
| Filling and ramming | 2/6 | 3/- | 4/- |
| Load and remove from site | 9/- | 10/- | 12/- |
| Plank and strut per foot super. | 5*d.* | 5*d.* | 5*d.* |
| **By Machine**: Per Cube Yard. | | | |
| Dig in bulk and load lorry | 1/3 | 1/10 | 2/4 |
| Lorry standing to load, and travel 5 miles, tip and return | 3/8 | 4/5 | 5/- |
| Adjust for each mile more or less, to tip | 6*d.* | 7*d.* | 7½*d.* |

## CONCRETE

| | |
|---|---|
| | 1½ in. Ballast Aggregate. Per yard cube |
| 6 : 1 Cement concrete in foundations | 47/6 |
| Do. around grillages | 49/- |

## REINFORCED CONCRETE

4 : 2 : 1—¾ inch concrete, worked around reinforcement, between formwork in the following (at various levels):

| | |
|---|---|
| Foundations and surface beds | 54/- Per cubic |
| Walls, 12 inches thick or more | 59/2 Yard |

| Sectional inches | Lintols and beams | Columns and casings | Braces and projections |
|---|---|---|---|
| Up to 36 | 2/9 | 2/11 | 2/11½ Per cubic ft. |
| 36 to 72 | 2/8 | 2/10 | 2/11 do. |
| 72 to 144 | 2/7½ | 2/9 | 2/10 do. |
| over 144 | 2/7 | 2/8 | 2/9½ do. |

| | |
|---|---|
| Walls 6 inches thick | 10/6 Per super yard |
| Do. 9 inches thick | 15/1½ do. |
| Suspended floors average 6 inches thick | 11/- do. |

REINFORCING RODS (round) bent and placed—

| Per cwt. | ¼ in. | ⅜ in. | ½ in. | ⅝ to 1 in. |
|---|---|---|---|---|
| In floors and beams | 49/- | 43/3 | 42/6 | 38/3 |
| In walls | 52/6 | 45/6 | 44/6 | 39/9 |
| In columns | 56/6 | 49/6 | 48/6 | 43/6 |

FORMWORK and Supports (4 times use)—

| Floor soffites. | Beams. | Walls. | Columns. |
|---|---|---|---|
| 14/- per Yard. | 1/9 | 1/6 | 1/9 per super foot. |

## BRICKWORK

BRICKWORK per YARD superficial reduced to ONE BRICK in thickness— In 1 : 3 cement mortar.

| | |
|---|---|
| Flettons or other common backing bricks at 90/- per 1,000 | 23/3 |
| Mild Stocks or do., at 190/- per 1,000 | 34/9 |
| Second Stocks or do., at 215/- per 1,000 | 34/9 |
| Southwater engineering (No.2) or similar bricks, at 228/6 per 1,000 | 42/- |
| Do. (No.1) or do., at 258/6 per 1,000 | 45/3 |
| Blue Staffordshire wire cut bricks, at 386/- per 1,000 | 57/8 |
| *Deduct* if 1 : 1 : 6 Cement-Lime mortar is used in lieu of 1 : 3 Portland Cement mortar | 2½*d.* |
| *Add* if brickwork commences above ground level | 2/- |
| Do. if in backing to masonry including cutting and waste for bonding | 1/6 |
| Do. If circular-on-plan | 2/3 |
| Do. If in underpinning | 3/6 |

BRICKWORK IN THICKNESSES NOT REDUCED—

| Per yard superficial. | Brick, on edge. walls. | Half-Brick walls. | 1 Brick finished fair on both sides. | 11″ Hollow wall with 2″ cavity and G.I. ties. |
|---|---|---|---|---|
| In Flettons or similar | 9/8 | 13/4 | 24/4 | 29/7 |
| In second stocks or do. | 14/2 | 20/- | 37/3 | 42/9 |
| *Add* : for pointing as work proceeds, per side | 1/- | 1/- | 1/- | 1/- |

| | Fletton | Stock | |
|---|---|---|---|
| Thicknessing to old walls, including cutting, toothing and bonding to same an average total thickness of ¾ brick | 31/9 | 41/9 | Per yard super. |
| Do. all as last but an average total thickness of 1½ bricks | 42/7 | 58/10 | do. |

WALLS BUILT IN SUPERIOR BRICKS—

In 1 : 3 Cement mortar, fair faced and pointed on both sides as the work proceeds :—

| | Half-Brick thick. | One Brick thick. | |
|---|---|---|---|
| In first quality Stocks at 225/- | 23/7½ | 42/- | Per yard |
| In red facings at 280/- | 26/6 | 47/10 | super. |
| In bluepressed facings at 427/- | 36/- | 66/- | do. |

GENERAL AND SUNDRY—

| | |
|---|---|
| Cut tooth and bond new brickwork to old, per inch in width of wall | 3*d.* per ft. |
| Damp proof course, double slate, horizontal | 1/10 super. |
| Do. as last, but vertical | 2/3 do. |
| Do., bitumen, Hessian base, do. | 9*d.* do. |
| Frames, bed and point in cement mortar, one side | 3*d.* per ft. run |
| Window board of 6″ × 6″ × ¾″ rounded on edge quarry tiles, bedded, pointed, cut and fitted | 2/- do. |

| | | |
|---|---|---|
| Terra cotta air bricks built in and pointed, including flue | 9″ × 6″ 4/- | 9″ × 9″ 7/- each |

# CURRENT MEASURED RATES (Continued)

## BRICKWORK—Continued

| | | |
|---|---|---|
| Chimney pots, plain red, set and flaunched in cement mortar | 1ft. high 9/6 | 2ft. high 14/- each |
| Metal windows, assembled, hoisted and fixed, lugs cut and pinned and frames bedded and pointed one side in cement mortar, of sizes as given | Up to 5ft. super. 7/6 | 5ft. to 10ft. super. 9/- each |
| | 10ft. to 20ft. super. 14/- | 20ft. to 40ft. super. 25/- each |
| Leaving holes through walls for pipes and afterwards making good | Small pipes 2*d.* per in. in depth | large pipes 4*d.* per in. in depth |
| Cutting holes through do., for pipes and afterwards do. | 6*d.* do. | 9*d.* do. each |
| Cut mortices in brickwork or concrete for bolts or dowels and run in with cement grout | 6*d.* per in. in depth | each |
| Holdfasts of stout hoop iron bent holed and screwed to frame and built in | 9*d.* | each |

## FACING—

*Extra* only over common brickwork (90/- per 1,000) for facing with superior bricks in *Flemish bond* and pointing as the work proceeds.

| | |
|---|---|
| Rustic Flettons (110/-) | 2/6 per yard super. |
| White (136/-) | 4/6 do. |
| First Stocks (225/-) | 11/3 do. |
| Reds (280/-) | 15/3 do. |
| Blue pressed (427/-) | 26/3 do. |

If built in English bond, *Add* 10% to above.
If do. half-brick stretcher bond, *Less* 25% off above.

## COPING—

All labour and material in forming brick-on-edge coping with two courses of roofing tiles under and cement weather fillets on both sides, built in cement and pointed as the work proceeds.

| Per foot run. | To wall 9" thick | To wall 14" thick |
|---|---|---|
| In picked Flettons | 2/11 | 4/3 |
| In first quality Stocks | 3/7 | 5/3 |
| In red facings | 3/9 | 5/6 |

| | |
|---|---|
| Plumbing angles | 2*d.* per foot run |
| Fair cutting | 9*d.* do. |
| Fair raking cutting | 1/3 do. |
| Fair circular cutting | 1/- do. |
| Fair squint or birdsmouth | 1/6 do. |

## ARCHES

| | |
|---|---|
| Extra over Fletton brickwork for forming window head with red facing bricks set on end and with 4½ soffits and pointing | foot run 2/- |
| Do. for rubbed and gauged flat arch in red rubbers set in putty with fine joints | foot super 10/- |

## PARTITIONS

| | Per yard super— 2 in. | 2½ in. | 3 in. |
|---|---|---|---|
| Concrete slab partitions built in cement mortar | 6/8 | 7/8 | 8/7 |
| Hollow terra-cotta do. | 7/2 | 7/10 | 9/- |
| Cutting and bonding at angles, intersections and ends | 4*d.* foot run. | | |

## PAVING

| | 1in. | 1½in. | 1¾in. | |
|---|---|---|---|---|
| Granolithic finished trowelled gauged 5 : 2 | 6/2 | 7/5 | 8/8 | yard super |
| 1×5 in. skirting with square top edge and cove at bottom | | | 1/4 | foot run |
| *Add* to granolithic paving for finishing top with Carborundum | | | 1/6 | yard super |
| 2 in. Reconstructed stone paving slabs and bedding and grouting in ash mortar | | | 12/- | do. |
| Cutting and waste on last | | | 6*d.* | foot run |
| Cutting and fitting and make good around gulley or similar | | | 1/6 | each |
| ¾in. pitchmastic flooring laid in one coat on a sprinkling of asphalte powder, on concrete base (measured separately) | | | 9/- | yard super |
| ¾in.×6in. Red quarry tile paving and do. | | | 19/6 | do. |
| ¾in.×6in. do. skirting | | | 1/3 | foot run |
| Angles in last | | | 3*d* | each |
| Jointless flooring, ¾in. thick | | | 20/- | yard super |
| 1¼in. blue paving | | | 30/- | do. |
| Fireclay bricks | | | 37/- | do. |
| 5in.×10in. Granite concrete kerb | | | 7/6 | yard run |

## ASPHALTE

| | Mastic | Rock | |
|---|---|---|---|
| ¾ in. Asphalte in two layers on screeded concrete | 15/9 | 22/6 | per yard super. |
| Fair rounded edge | 6*d.* | 6*d.* | per foot run |
| ¾ in. skirting 6 in. high with chamfered top edge and angle fillet at bottom and tucking top into groove in wall | 2/9 | 3/4 | do. |
| Angles | 9*d.* | 10*d.* | each |
| 1½ in. Asphalte in three layers in horizontal tanking | 21/- | 31/6 | per yard super. |
| Do. but vertical | 27/6 | 39/8 | do. |
| Double angle fillet | 1/6 | 1/8 | per foot run |
| Collars | 3/- | 3/6 | each |

## DRAINAGE

| Per yard run | | |
|---|---|---|
| Excavate trench for drain and throw out, plank and strut to sides of trench as necessary and return, ram and consolidate earth after drain is laid and fill carts and remove surplus earth | 1 foot in depth | 3/- |
| | 2 do. | 5/- |
| | 3 do. | 9/9 |
| | 4 do. | 13/- |
| | 5 do. | 16/3 |
| | 6 do. | 26/10 |
| | 7 do. | 31/9 |
| | 8 do. | 36/9 |
| | 9 do. | 41/9 |
| | 10 do. | 46/8 |
| | 11 do. | 62/6 |
| | 12 do. | 69/- |

| | Per yard run 4in. wide | 6in. wide | 9in. wide |
|---|---|---|---|
| Portland cement (1 : 6) concrete bed under drain pipes and benching up on both sides | 5/- | 5/10 | 7/3 |

| | 18in. wide | 20in. wide | 23in. wide |
|---|---|---|---|

Glazed stoneware drain pipes with socketted joints laid and jointed with a ring of rope yarn dipped in cement grout and a Portland cement joint (1:1)

| Per foot run— | 4 in. | 6 in. | 9 in |
|---|---|---|---|
| Best quality in 2 ton lots ex truck | 1/11½ | 2/11 | 5/0½ |
| British standard do. in do. | 2/1 | 3/1 | 5/3½ |
| *Add* to either of the above if ex wharf in lots of 100 pieces or more | 2½*d.* | 3½*d.* | 6½*d.* |
| *Add* to either of the top two items if as last but less than 100 pieces | 3½*d.* | 5½*d.* | 9½*d.* |
| *Add* to any of the above classes if tested | 2½*d.* | 4½*d.* | 7½*d.* |
| *Extra over* for bends, each | The cost of two feet of similar class pipe as above. | | |
| *Ditto* Junctions, each | Ditto one-and-three-quarters feet of do. | | |

| | | | |
|---|---|---|---|
| Stoneware gulley and jointing to drain and embedding in concrete each | 19/6 | 21/- | 32/6 |
| *Add* for horizontal inlet do. | 3/- | 3/- | 3/- |
| Do. vertical inlet do. | 4/4 | 4/4 | 4/4 |
| Do. black iron grid do. | 1/2 | 2/3 | 4/6 |
| Glazed stoneware interceptor with cleaning arm and stopper and building into side of chamber and connecting to drain and surrounding with concrete (+ 65% on list) each | 43/- | 56/- | 90/- |

## IRON DRAIN PIPES—

| | Per foot run 4 in. | 6 in. |
|---|---|---|
| Heavy cast iron socketted and laying and jointing in molten lead— | | |
| In main runs | 8/1 | 11/10 |
| In branches | 8/7 | 13/- |
| | each | |
| *Extra over* last for bends and extra joint | 22/6 | 39/8 |
| *Do.* on do. for junctions and extra joint | 32/- | 59/- |
| Cast iron gulley with 10½ in. inlet and 4 in. outlet, composed of hopper and trap, and 9 in. extension piece and 10½ in. grating, and jointing all together, and jointing to drain and surrounding in concrete | 95/- | — |
| Do. rain water shoe with vertical inlet and inspection cover, and joint up and embed as last | 40/- | 90/- |

## MANHOLE SUNDRIES—

| | | 4 in. | 6 in. |
|---|---|---|---|
| Salt glazed straight half-round main channels | each | 4/6 | 6/3 |
| Do. curved | do. | 9/- | 13/- |
| Do. three-quarter section splayed channel bends (Barrons or similar) | do. | 11/3 | 16/6 |
| Heavy cast iron manhole steps | do. | 5/- | - |
| Fix only manhole covers | do. | 8/- | - |
| 4in. Mica flap, brass faced, fresh-air inlet valves and fix with molten lead joint | do. | 24/- | |

## ROOFER

### GREY ASBESTOS CORRUGATED SHEETING—

| | |
|---|---|
| In roofing with side laps and 6in. horizontal lap, secured to steel purlins with necessary bolts | 73/- per square |
| Eaves filler pieces | 1/6 foot run |
| Adjustable ridge | 2/11 do. |
| Barge boards | 1/10 do. |
| Plain roofing tiles, machine made, sand faced, 4in. gauge, nailed every 4th course with 1½in. galvanized nails to battens (measured separately) | 150/- per square |
| *Extra over* last for top edge or abutment cutting | 9*d.* foot run |
| Do. for double course at eaves | 1/1½ do. |
| Do. for verges, undercloak and bedding and pointing | 2/- do. |
| Do. Valley tiles including cutting and waste on both sides | 7/10 do. |
| Do. Bonnet hips and do. and bedding and pointing | 8/6 do. |
| Half-round ridge and bed and point | 2/9 do. |
| Fixing soakers | 1/- dozen |

| | |
|---|---|
| Bituminous felt roofing in two layers, laid breaking joint and bedded with hot mastic and finished with fine dry grit | 6/9 yard |
| Do. but in one layer only | 4/9 super. |

# CURRENT MEASURED RATES (*Continued*)

## ROOFER—*Continued*

ASBESTOS SLATES—per square—

| | 15¼″×15¼″ diagonal | 20″×10″ | 24″×12 |
|---|---|---|---|
| 3in. lap. Galvanized nails and copper disc rivets— | | | |
| Grey .. .. .. | 54/– | 86/– | 81/– |
| Blue .. .. .. | 78/– | 117/– | 103/– |
| Red .. .. .. | 79/– | 118/– | 107/– |

Allow for cuttings per foot run—
At eaves the length by 12 in. straight or 18 ins. raking.
At tops, verges and abutments 6 in. straight or 9 in. raking.
Hips and valleys (measured each side), 9 ins.

## FLOORS AND FLATS

Constructed in hollow tile in-situ or in precast units hoisted, bedded and fixed—

| | Superimposed load in lbs. per yard super. | Span 12 feet | Span 16 feet |
|---|---|---|---|
| Per yard super | 50 .. | 33/– | 35/9 |
| | 100 .. | 33/10 | 38/6 |
| | 150 .. | 35/9 | 40/9 |

An allowance of 20 lbs. has been made to cover dead load in finishing.

Fair edge to slabs .. .. .. .. .. 6*d.* per foot run
Splay cutting and waste .. .. .. .. 1/6 do.

## CARPENTER AND JOINER

Softwood at minimum control cost. per foot cube—

| SOFTWOOD CARCASSING— | Plates | Joists | Rafters | Trusses |
|---|---|---|---|---|
| Labour, materials, waste nails, hoisting and fixing .. .. .. .. | 14/2 | 15/8 | 16/4 | 18/6 |

| FLOORING— Per square— | ⅞ in. | 1 in. | 1½ in. |
|---|---|---|---|
| Rough boarding .. .. .. .. | 74/– | 95/– | 117/6 |
| Softwood batten flooring, straight joints, splayed headings .. .. .. | 84/– | 108/– | 134/6 |
| Do. grooved and tongued .. .. .. | 94/6 | 122/– | 150/– |

| SKIRTING— Per foot superficial | ½ in. | ⅝ in. | 1 in. |
|---|---|---|---|
| Wrot softwood moulded skirting including grounds and backings, plugged .. .. | 2/9 | 3/2 | 3/6 |

Mitres to do. .. 1½*d.* per sectional inch.
Fitted ends .. 1*d.* do.

SASHES, Fanlights, casements, borrowed lights, etc.—

| Per foot super— | Without bars | With bars (2ft. sup. in each square) |
|---|---|---|
| 2 in. softwood rebated, moulded and fixed .. | 2/– | 3/2 |
| *Add* if fitted with beads .. .. .. | 5*d.* | 1/3 |
| *Add* if fitting on butts .. .. 1/6 each | | |

WINDOWS, hung on lines—
Softwood cased frames, 1in. inner and outer linings, 1½in. pulley stiles, 2in. sashes, oak sill.

| Per foot super. | Overall size of frames— 6ft. | 21ft. | 32ft. | 44ft. |
|---|---|---|---|---|
| Window as described .. .. .. | 11/2 | 5/7 | 4/6 | 3/8 |
| *Add* if sashes in squares, about 2 feet super in each .. .. .. | – | 9½*d.* | 1/1 | 1/– |
| Extra for hanging sashes with lines, weights and axle pulleys .. .. | each 21/– | 29/– | 36/– | 44/– |

| Per foot run— | Sectional area— 4 in. | 6 in. | 8 in. | 10 in. | 12 in. |
|---|---|---|---|---|---|
| Softwood, wrot, framed, rebated, rounded and fixed .. .. | 1/3 | 1/7½ | 1/11 | 2/2½ | 2/6 |

FINISHINGS TO OPENINGS—

| Per foot super— | ⅝ in. | 1 in. | 1½ in. | 1½ in. |
|---|---|---|---|---|
| Softwood linings, tongued at angles and tongued to frame including grounds and backings .. .. .. .. | 2/3 | 2/7 | 3/– | 3/4½ |
| *Add* if crosstongued .. .. .. .. | 4*d.* | 4*d.* | 4*d.* | 4*d.* |
| Softwood wrot rounded on front edge and with tongue at back window board including groove in sill and bearers.. | 2/4½ | 2/10 | 3/4 | 3/9 |
| *Add* for ends to last notched, returned and rounded .. .. .. | 10*d.* | 10½*d.* | 11*d.* | 1/– |

| Per foot run— | Sectional area in inches— 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Softwood wrot and fixed in bearers, backings, grounds, fillets, and similar .. | 3½*d.* | 5*d.* | 7*d.* | 8½*d.* | 10½*d.* | 1/1 |
| *Add* if in short lengths .. | 1*d.* | 1*d.* | 1½*d.* | 1½*d.* | 1½*d.* | 1½*d.* |
| ,, if plugged to brickwork | 3*d.* | 3*d.* | 3*d.* | 3*d.* | 3*d.* | 3*d.* |
| ,, if framed as in legs and bearers .. .. | 1½*d.* | 1½*d.* | 1½*d.* | 1½*d.* | 2*d.* | 2*d.* |
| ,, if rebated or grooved or beaded .. .. | ½*d.* | ½*d.* | ½*d.* | ½*d.* | ½*d.* | ½*d.* |
| ,, if chamfered or rounded edges | | | 1½*d.* | | | |
| ,, if moulded in architraves, capping, etc. | | | 3*d.* | | | |

DOOR FRAMES—

| Per foot run— Per sectional inch— | 6in | 8in. | 10in. | 12in. | 13½in. |
|---|---|---|---|---|---|
| Softwood, wrot, rebated, rounded, framed and fixed .. . | 1/5 | 1/8½ | 2/0½ | 2/3½ | 2/6½ |

DOORS— Per foot super. Number of panels—

| 2 in. Softwood, square framed and flat panels, both sides, hung on butts | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| | 3/10 | 4/6 | 4/10 | 5/2 | 5/6 | 5/9 |
| 1½ in. do. .. .. | 3/2 | 3/11 | 4/4 | 4/6 | 4/10 | 5/– |
| *Add* for each side moulded | 3*d.* | 4*d.* | 5*d.* | 6*d.* | 7*d.* | 7*d.* |
| *Add* for do. flush panelled | 6½*d.* | 6½*d.* | 6½*d.* | 5*d.* | 6*d.* | 6*d.* |

| Per foot super— | ⅝ in. | 1 in. | 1½ in. | 1½in. |
|---|---|---|---|---|
| In shelves, table tops, wrot and fixed.. | 1/7 | 2/– | 2/5 | 2/11 |
| Do. in divisions and ends framed .. | 1/10 | 2/3 | 2/9 | 3/2 |
| *Add* if crosstongued .. .. .. | 4*d.* | 4*d.* | 4*d.* | 4*d.* |
| *Add* if buttoned .. .. .. | 6*d.* | 6*d.* | 6*d.* | 6*d.* |

SUNDRIES—

| Per foot run | In short lengths | In long lengths | Add for cups & screws |
|---|---|---|---|
| Glazing beads, mitred around and fixed with brads .. .. .. | 5*d.* | 4*d.* | 1*d.* |
| Rounded heel or hollow .. | | 4*d.* | |
| Tongued and grooved angle .. | | 6*d.* | |
| Glue blocking .. .. .. | | 6*d.* | |
| Mitres .. .. .. .. | 1½*d.* per sectional inch. | | |
| Fitted ends .. .. .. .. | 1*d.* do. | | |

STAIRCASE—

| | Per ft. super |
|---|---|
| 1½ in. Softwood treads with moulded nosings. 1 in. risers tongued both edges and glued, blocked and bracketted on and including two fir framed carriages .. .. | 4/6 |
| Do. but in winders .. .. .. .. .. | 5/4 |
| 1½ in. crosstongued landing in framed carriages .. .. | 3/8 |
| 2 in. moulded string .. .. .. .. .. | 4/2 |
| 2 in. do. ramped .. .. .. .. .. | 8/4 |
| Ends framed to newel .. .. .. .. .. | 4/– each |
| Tongued and mitred angles.. .. .. .. .. | 1/6 do. |
| Tongued heading joints .. .. .. .. .. | 1/6 do. |
| Ends of treads and risers housed to string .. .. | 1/3 do. |
| Extra for curtail ends to steps, glued up and veneered riser and solid blocking .. .. .. .. .. | 60/– do |

| | 1in. | 1¼in. | 1½in. |
|---|---|---|---|
| Balusters about 2 ft. 9 ins. long, square and framed each end .. .. .. each | 2/7 | 2/11 | 3/4 |
| 3½ in.×3½ in. square newel, framed .. .. | 2/8 per foot run | | |
| Mahogany moulded handrail (3in.×2½in.) .. | 5/– do. | | |
| Do. ramped .. .. .. .. .. | 9/– do. | | |
| Do. wreathed .. .. .. .. | 18/– do. | | |
| Ends framed to newels .. .. .. .. | 5/– each | | |
| Joints and handrail screws .. .. .. | 5/– each | | |

| FIXING ONLY IRONMONGERY— | To deal | To hardwood |
|---|---|---|
| Barrel bolts .. .. .. .. .. | 1/2 | 1/8 each |
| Flush bolts .. .. .. .. .. | 2/7 | 3/5 do. |
| Sash fasteners .. .. .. .. | 1/8 | 2/2 do. |
| Rim locks and furniture .. .. .. | 3/5 | 4/8 do. |
| Mortice locks and do. .. .. .. | 6/8 | 10/3 do. |
| Cupboard locks .. .. .. .. | 2/1 | 2/7 do. |
| Casement fasteners .. .. .. .. | 1/8 | 2/2 do. |
| Do. stays .. .. .. .. | 1/8 | 2/2 do. |
| Grip handles .. .. .. .. .. | 1/6 | 1/8 do. |
| Spring catches .. .. .. .. .. | 1/8 | 2/2 do. |
| Cabin hooks .. .. .. .. .. | 1/4 | 1/8 do. |
| Floor springs including oil .. .. .. | 39/– | 48/– do. |
| Overhead springs .. .. .. .. | 8/6 | 10/3 do. |
| Springhinges .. .. .. .. .. | 7/9 | 9/4 do |

## SMITH AND FOUNDER

Basis framed steel joists and hoist and fix .. .. 47/6 per cwt.
Do. but in compound girders.. .. .. 50/6 do.
Do. but in stanchions .. .. .. .. 58/– do.
Trusses .. .. .. .. .. .. .. 66/– do.
*Additional cost per cwt.* over basic sections for rolled steel joists of the following sections:—
9in.×7in. .. 3½d. per cwt. 6in.×3in. .. .. 4½*d.* per cwt.
5in.×3in., 10in.×8in., 12in.×8in., 14in.×8in., 16in.×8in., 18in.×6in., 18in.×7in., 20in.×6½in., 20in.×7½in. .. .. .. .. .. .. 6½*d.* do.
5in.×2½in., 22in.×7in. .. .. .. .. 10*d.* do.
4in.×3in., 24in.×7½in. .. .. .. .. 1/1½ do.
3in.×3in. .. 1/4½ per cwt. 4½in.×1½in. .. 2/9 do.
3in.×1½in. .. .. .. .. .. .. 3/10½ do.
Bolts and nuts, fitted .. .. .. .. .. 90/– do.
Forged straps .. .. .. .. .. 80/– do.
Wrot iron balustrade .. .. .. .. 100/– do.

RAINWATER GOODS—

| Round cast-iron pipe with socketted joints caulked with red lead and tow and fixing with pipe nails and gas barrel distance pieces to plugs in brickwork .. .. | Per foot lineal 2 in. | 3 in. | 4 in. |
|---|---|---|---|
| | 2/7 | 3/2 | 4/1 |
| Extra for shoes .. .. .. .. | 4/– | 4/9 | 6/– |
| Do junctions .. .. .. .. | 5/3 | 7/– | 9/– |
| Do. bends .. .. .. .. | 4/3 | 5/4 | 6/9 |

# CURRENT MEASURED RATES (*Continued*)

## RAINWATER GUTTERS

| | Per foot run— 4 in. | 5 in. | 6 in. |
|---|---|---|---|
| Half round cast-iron eaves gutters jointed in red lead and bolted and fixed on iron brackets | 2/2 | 2/6 | 3/6 |
| Ogee do. All as last | 2/6 | 3/– | 3/10 |
| Extra for stop ends | 2/4 | 2/7 | 2/11 |
| Do. angles or outlets | 4/6 | 5/7 | 6/8 |

## PLUMBER

EXTERNAL— Soakers Flats Flashings

Milled lead 4 lb. and over. per Cwt. 130/– 152/– 162/–

Welt. 1/– ft. run. Lead wedge. 9*d.* ft. run. Copper nail. 6*d.* ft. run. Bossed ends to rolls. 2/– each.

| Per foot run | ½ in. | ¾ in. | 1 in. | 1¼ in. | 1½ in. | 2 in. |
|---|---|---|---|---|---|---|
| Lead main fixed with | 4/3 | 6/– | 8/– | 10/– | 13/4 | 17/5 |
| Lead service fixed with tacks | 3/11 | 5/3 | 6/8 | 8/2 | 10/5 | 13/10 |
| Lead waste | 2/11 | 3/10 | 4/9 | 5/7 | 7/8 | 9/7 |
| Bends | – | – | – | 1/3 | 2/3 | 6/6 |
| Solder joints | 5/4 | 6/6 | 7/8 | 9/– | 10/7 | 13/– |
| Unions and joints | 9/3 | 11/10 | 13/10 | 17/4 | 20/4 | 31/– |
| Stop cocks and 2 joints | 20/6 | 27/– | 39/6 | – | – | – |
| Bib cock and joint | 13/6 | 18/3 | – | – | – | – |
| Ball valve and joint | 16/6 | 26/6 | 37/6 | – | – | – |
| Ferrule and joints | – | – | – | – | – | 27/– |

COPPER TUBES (B.S. 659) fixed with brass screw on brackets—

| | ½ in. | ¾ in. | 1 in. | 1½ in. | 1¼ in. | 2 in. |
|---|---|---|---|---|---|---|
| Tubes, per ft. run | 2/0½ | 2/4 | 3/4 | 3/10 | 4/6 | 6/8 |
| Couplings, straight | 2/8 | 3/4 | 5/– | 6/7 | 8/6 | 12/– |
| Do. bends, each | 5/6 | 6/8 | 9/6 | 13/– | 20/– | 27/6 |
| Do. tees, each | 6/2 | 7/3 | 10/9 | 14/9 | 20/1 | 29/– |
| Do. cistern, each | 5/– | 6/– | 8/2 | 11/– | 14/– | 18/6 |
| Stop cock, each | 16/6 | 23/3 | 37/– | 63/– | 98/6 | 155/– |

| BLACK TUBING fixed with | ½in. | ¾in. | 1in. | 1¼in. | 1½in. | 2in. |
|---|---|---|---|---|---|---|
| pipe brackets | 1/1 | 1/3 | 1/6 | 1/10 | 2/2 | 2/8 |
| Bends and fitting, screwing, cutting and jointing | 2/5 | 2/10 | 3/9 | 4/9 | 5/10 | 8/1 |
| Tees and do. | 2/9 | 3/3 | 4/– | 4/8 | 5/9 | 8/– |
| Union connectors and do. | 4/– | 4/10 | 6/6 | 7/9 | 9/4 | 12/– |
| Forming single set in tube | 1/– | 1/1 | 1/2 | 1/6 | 2/– | 3/6 |

(each)

*Add* if tubing is galvanised, 30%. Do. for short lengths of tube, 40%

| | 2 in. | 4in. |
|---|---|---|
| Coated iron L.C.C. weight soil pipe and fixing with pipe nails and distance pieces to wall and joints caulked with molten lead (M) | 3/10 | 5/6 foot run |
| Extra only for bends and joint | 9/– | 14/– each |
| Do. junctions and joint | 10/3 | 17/6 do. |
| Do. cleaning doors | 9/9 | 10/6 do. |
| Domical wire guards | 1/3 | 1/4 do. |

| PLASTERER— | | Yards super. Wall. | Floor. | Narrow widths. | Sundries feet lineal. |
|---|---|---|---|---|---|
| Lime and hair | ½" Render and set | 4/9 | – | Increase in cost | Quirk 2*d.* |
| Do. | ¾" Render float and set | 6/– | – | up to 3" wide | Arris 3*d.* |
| Sirapite | ⅛" Skimming coat | 3/– | – | 75% | Fair edge 2*d.* |
| Do. | ½" Render and set | 5/8 | – | Do. 3" to 6" | Rounded edge 4*d.* |
| Do. | ¾" Render float and set | 7/3 | – | 60% | Flush bead 1/3 |
| Portland | ½" Backing coat | 3/9 | – | Do. 6" to 12" | |
| Do. | ⅜" Plain face | 6/3 | – | 40% | Mouldings per inch 4*d.* |
| Do. | ½" Screed | 3/9 | 3/1 | – | Metres—1 ft. |
| Do. | ¾" Screed | 4/8 | 4/– | | Jointing new to old plastering 3*d.* |
| Keenes | ⅛" Skimming coat | 4/– | – | | |

| | |
|---|---|
| Plaster board and scrim | 4/6 – |
| Metal lathing ⅜" × 24 gauge | 3/3 – |
| Dubbing up to ½" thick | 1/– – |
| ¼"×6"×6" White or cream glazed wall tiling and setting on prepared screed | 31/– yard super. |

Rounded edge to do. 3½*d.* foot run; angles for same 3½*d.* each.

Cutting and fitting tiles around pipes, clips, etc. 9*d.* each.

## POLISHING

| NEW WORK— | Foot super | Foot run |
|---|---|---|
| Staining, bodying-in and French Polishing | 2/– | – |
| Do. on sashwork | – | 1/3 |
| Staining and wax polishing on hardwood | 9*d.* | – |
| Do. on sashwork | – | 6*d.* |
| OLD WORK— | | |
| Cleaning down old work and repolishing | 10*d.* | – |
| Stripping, preparing and repolishing | 2/3 | – |
| Do. on sashwork | – | 1/6 |

## INTERNAL PAINTING

With white lead base in common colours, with brushes.

| | Knot stop and prime | Prime and paint once | Prime and paint twice | Add for each extra coat |
|---|---|---|---|---|
| ON WOOD— | | | | |
| General surfaces | 2/– | 3/7 | 5/2 | 1/4 Per Yard super. |
| Running lengths not exceeding 3" wide | 3*d.* | 5½*d.* | 7½*d.* | 2*d.* Yard run |
| Do. 3" to 6" wide | 4½*d.* | 7½*d.* | 10½*d.* | 2½*d.* do. |
| Do. 6" to 9" wide | 6½*d.* | 11½*d.* | 1/4 | 4*d.* Do. |
| Do. 9" to 12" wide | 8½*d.* | 1/2½ | 1/8½ | 5½*d.* do. |
| Sash square each side | 4/1 | 6/10 | 9/8 | 2/6 per dozen |
| Do. in large squares | 5/11 | 9/10 | 13/9 | 3/3 do. |
| Opening edges | 6*d.* | 1/– | 1/6 | 6*d.* each |
| Casement frames each side | 4*d.* | 7*d.* | 10*d.* | 2½*d.* Yard run |
| Mullions or transomes, do. | 5½*d.* | 9½*d.* | 1/1 | 3½*d.* do. |
| ON PLASTER— | | One coat | Two coats | Three coats |
| Paint on surfaces | | 1/10 | 3/5 | 4/11 Per Yd. sup. |
| Do. on mouldings | | 2/1 | 4/– | 5/8 do. |
| Do. on enrichment | | 3/7 | 6/9 | 9/7 do. |
| ON STEEL— | | | | |
| Paint on structural steel | | 1/7 | 2/11 | 4/3 do |
| Do. on members of roof trusses | | 2/7 | 4/10 | 7/1 do. |
| Do. on metal windows measured over all on both sides, divided into squares | | 2/6 | 4/3 | 5/11 do. |
| Do. divided into large squares | | 1/11 | 2/11 | 4/4 do. |
| Do. divided into extra large squares | | 1/6 | 2/3 | 3/3 do. |
| Do. on opening edges | | 8*d.* | 1/2 | 1/8 each |
| Do. on rain water pipe | | 6*d.* | 1/– | 1/5 Yard run |
| Do. on do. gutter | | 10*d.* | 1/8 | 2/5 do. |
| Do. on small pipe | | 2½*d.* | 4½*d.* | 6½*d.* do. |

## GLAZING (To New Work)

Polished Plate Glass, ordinary substance (about ⅛in.), glazing quality, in the following sizes, glazed complete, in quantities exceeding 100 feet superficial— Per foot super

| | | | | |
|---|---|---|---|---|
| In plates not exceeding | 2 feet super | in each | | 3/10 |
| Do. | 3 feet | do. | | 4/2 |
| Do. | 5 feet | do. | | 4/4 |
| Do. | 45 feet | do. | | 4/11½ |
| Do. | 100 feet | do. | | 5/8½ |

*Add* extra price for glazing with screw beads or clips 3*d.* per foot super

Do. if glazing bedded in washleather or velvet 5*d.* per foot run

| SHEET GLASS glazed complete (100 feet super or more). foot super in new work— | 24 oz. | 26 oz. | 32 oz. |
|---|---|---|---|
| Ordinary glazing quality (average) | 1/4½ | 1/6 | 1/8½ |

Sundry glass and glazing all as last described to wood—

| | | |
|---|---|---|
| ⅛ in. Hammered | 1/6 per foot super | |
| Double cathedral rolled | | |
| Rimpled | | |
| Waterwite | | |
| ⅛ in. Arctic | | |
| Majestic | | |
| Flemish | | |
| Pinhead Morocco | | |
| Prismatic | 2/2 | do. |
| ⅛ in. roughcast | 1/7 | do. |
| ⅛ in. wired do. | 1/9 | do. |
| ⅛ in. Georgian wired do. | 1/9½ | do. |
| Wired Arctic | 2/8½ | do. |

*Add* for metal casements or frames glazed with screw beads 2½*d.* do.

*Extra* for do. with quick drying-putty 1½*d.* do.

Copper clips 4*d.* each. Lead or zinc clips 3*d.* each

## PAINTER AND DECORATOR

DISTEMPERING—In common colours, put on with brushes—

| ON PREPARED SURFACE. per yard super— | 1 coat (finish) | 2 coats (undercoat and finish) | *Add* if required for Sealing coat | Stippling |
|---|---|---|---|---|
| Ordinary distemper on flat surface of plaster | 6*d.* | 11*d.* | 5*d.* | 2*d.* |
| Washable do. on do. of plaster | 8½*d.* | 1/3 | 5*d.* | 2*d.* |
| *Add* if in margins, narrow widths or panels | 30% | 30% | 20% | 50% |
| *Add* if on mouldings | 50% | 50% | 45% | – |
| *Add* if on enrichments | 160% | 160% | 115% | – |

## PAPERHANGING

| Hanging only— | Per piece— | Lining | Pattern |
|---|---|---|---|
| On walls | | 3/– | 3/6 |
| On Stairs | | 4/3 | 5/3 |
| On ceilings | | 4/– | 4/6 |

# NEWS of the BUILDING INDUSTRY

## INCENTIVES

***This, the second article based on Mr. Russon's book "Bonusing for Builders," deals briefly with the application of incentive schemes to various types of work.***

INCENTIVE schemes can be applied to all building work ranging from maintenance work to large contracts. The different types of work can be classified under seven headings, namely, (*a*) housing, (*b*) general contract building, i.e., all new building other than houses, (*c*) major alterations, (*d*) minor alterations, (*e*) general repairs, (*f*) maintenance and jobbing, and (*g*) joiners' shop, mill and factory work. Only three variations of incentive procedure are necessary to cover all classes. Individual bonusing is impracticable in the Building Trade, except for individual operators engaged on single items of plant ; even then it is advisable to group the work of machine operators. Jobbing work is possibly the only other exception.

Group bonusing reduces administration costs to a minimum, promotes team spirit and facilitates site organization, especially in housing. Groups should be as small as possible. Five men is an ideal team, which may be increased to a maximum of ten. Generally speaking, it will be beneficial to let the operatives decide the composition of their gang. The operatives in respective teams will soon eliminate the shirker, for they will not be prepared for one of their team to receive equal bonus for less work. Each group should have and retain a distinctive number. On a large job the timekeeper or site checker should " spot check " regularly to ensure that men are working on the task set and not helping another gang out.

Incentives and costing, i.e., the control of labour cost, are indisputably linked. Before the war many builders analysed their costs under trade headings and compared them on completion with the B. of Q. estimates.

This practice is now obsolete. What is now required is unit cost information to give the estimator factual data for future tenders. The practical builder is concerned to control the cost within the limits allowed in his estimate. This he does by dividing his costs under their main headings, e.g., labour, materials, sub-contractors, plant (transport) and overheads. The cost of labour is automatically controlled by incentives. If all work done is bonused and the targets are set within the B. of Q. rates, and if a saving is made on the target with a resultant bonus to the workmen, no further detailed costing is necessary so far as labour is concerned. If on the other hand no bonus is payable then the builder can apply the remedy—if such be possible—immediately. The value in costing lies in the control of expenditure. Control of materials by a properly organized buying system ; control of sub-contractors by comparing estimates and actual costs and control of labour by means of scientific incentives. All incentives should provide additional payment for increased production and should be devised fairly to employer and operative and to sustain confidence between the two. An incentive scheme should be unambiguous in definition, simple in operation and capable of prompt investigation and adjustment of complaints.

Target figures are decided by the builder alone. They need not be explained in detail, but they must be agreed and therefore readily understood by the operative.

The standard rate of wages must be paid for all hours worked and each employer is entitled to a bonus if his output exceeds the target ; payment being *pro rata* to wages earned, i.e., hours worked and rates received. All productive workers should be included in any incentive scheme. Non-producers such as checkers and timekeepers can participate if a proportionate allowance is added when compiling a target cost.

When arriving at a target all elements of labour cost must be taken into account. Indirect labour items (such as lorry driver, mortar mixing for bricklayer and plasterer, unloading, double handling, day work, cleaning down, scaffolding, etc.) should be added to target figures to enable all operatives to share in the bonus distributed. It is advisable to distribute only 50 per cent. of the saving to reduce future tenders. Staff general foremen should not be included in target costs nor share in savings, but should be included in a separate bonus or profit-sharing scheme. All foremen who actually work with tools, however, should receive a share of the bonus the same as the operatives.

A percentage of the remainder, say, 10 per cent, could (if the builder desired) be placed in a pool to cover contingencies, such as rectifying bad workmanship, Christmas or holiday funds, merit awards or as supplementary wages for time lost due to weather or sickness. Site staff could receive payment from this pool. These are suggestions only.

Guaranteed time payments, due to bad weather, should not be included in the cost of an operation or bonusing unit.

Nor should loss on a bonusing unit, caused either by too high targets or delay through material shortage or sub-contractors, be carried forward. Each target must be settled independently.

The following are definitions of three systems : the stage bonusing system ; the unit rate system ; the measured target.

In stage bonusing (or time rate) systems a target in man hours, or their cash equivalent is set for a specific section of work, stage or complete operation. If the work is completed in a shorter time or at lower cost than the target set, a proportion of the difference between target and actual cost is distributed as bonus.

A " stage," " task," " operation " or " bonusing unit " represents that piece of work (building, group of buildings or section of a building) for the completion of which a target is set, either in terms of money or man hours.

Bonusing units can be assessed either (*a*) in terms of separate trades (essential for unit costing), or (*b*) combination of trades (e.g., brickmakers and masons working on the same unit), or (*c*) operations performed by unskilled workers, or (*d*) a collection of various operations in connection with one trade (e.g., grouping painters carrying out distempering and painting walls, ceilings and woodwork).

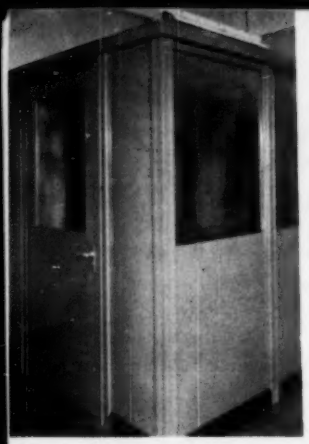
In the unit rate system fixed rates of output per hour, day or week are pre-agreed. Bonus becomes due when the output is greater than the pre-agreed fixed rates. This is somewhat similar to the wartime " payment by results," i.e., the constants of labour per man hour are determined before work begins and then measured and valued on the site as the work proceeds at regular intervals.

The measured target is used for applying incentives to building work which cannot be predetermined. Constants of labour are decided before operations commence and the work is measured by bonusing surveyors or clerks from the actual job—not from plans—as the work proceeds.

The actual cost in time and cash is recorded daily and the measurements are taken at regular intervals. When the bonusing surveyor completes his measurements and arrives at the total of work done, the constants of labour are then referred to and calculated. The actual cost is then deducted from this sum ; a bonus is earned if the cost is less than the measured sum allowed.

It must be emphasized that the more frequently bonus is paid to the employee, the more sustained is the spur to increased effort and continued reduction in costs—many complaints have been made that some builders pay 100 per cent of the savings, whilst

(*Continued on page 86*)

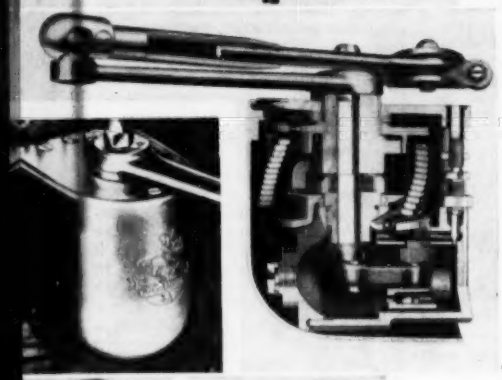


## MOSAICS A3/i
## STRUCTURE PARTITIONS

A feature of the metal partition shown here is the incorporation of the electric light switch in the door frame. The finish is stove enamel. Recently a similar design has been produced in which the standards and framing are flush with the panels.

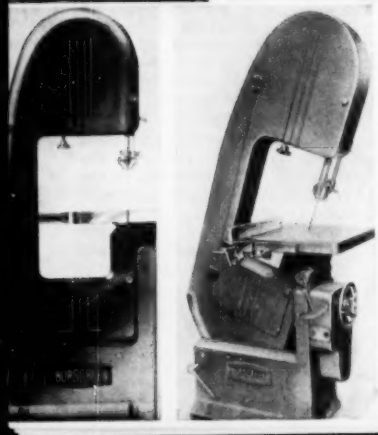
## MOSAICS B2/i
## FITTINGS SINKS

Polished stainless steel sink, pressed from one piece of metal 18 s.w.g. There are no joints between bowl and drainer. Model RBW 36 measures 3' 6" × 1' 6". Weighs 20 lb. Model RBW 26 measures 2' 6" × 1' 6". Weighs 14 lb. The lower photograph shows the removable overflow. Apart from allowing easy cleaning, this is designed to enable the sinks to be "nested" for export packing. Other models are made for bar counter use, etc., with single or double drainer. The sinks are sound-deadened on the underside.



## MOSAICS B3/i
## FITTINGS DOOR FURNITURE

Door check and closer, available home and export in 20 colours. Weighs 7 lb. gross. Packs in box 9" × 5" × 4". Arm at 45° for medium heavy doors. Closing speed regulator, adjustable by screwdriver, is concealed in the head fitting. Brackets supplied if specified.



## MOSAICS E1/2
## PLANT WOODWORKING MACHINERY

A light duty 16" bandsaw with canting head in place of canting table for bevel cutting, with 2 h.p. motor. The finish is sprayed cellulose. Nett weight is 5 cwt. The main frame is in one piece enclosing top and bottom saw pullies, with access through hinged doors. Ball-bearing anti-friction saw guide is provided. Spring loading is used to tension the upper saw pullies. Pullies are adjustable and interchangeable.

## INCENTIVES

(Continued from page 85)

others, who try to conform to the recommendation of the N.F.B.T.E., pay only 50 per cent.

The builder who only pays 50 per cent gives the operative a fairer deal. For the builder who pays out 100 per cent. of saving may set his target at (for example) 60 bricks an hour. The bricklayer lays 70 an hour and receives full bonus for the additional 10 bricks.

The builder who shares equally with the operative on any saving may set the target at 50 bricks an hour. The bricklayer lays 70 per hour and is paid 50/50. He lays 20 extra bricks and is paid fully for 10. The builder who continually sets his target too high will, sooner or later, find his most industrious workers leaving him to work for a more enlightened firm.

These remarks apply equally to the builder who starts off by setting a target of 60 bricks an hour and, because his operatives regularly lay 70, raises his target for the second contract to 70. The result is disgruntled employees and exodus.

There are several ways of sharing the bonus, but none more equitable than proportionately to hours worked and rates received.

*Mr. Russon's book contains many worked-out examples. The next article will summarize Mr. Russon's remarks on the application of incentives to housing and general contracting.*

## MOSAICS

This new feature—Memorandum of Specification Accessories, Card Index Serial — started in the issue for July 7. As the name implies, the feature is designed to provide architects with a ready-made card index to new products. The scheme is explained in *The Architect and Building News* of July 7th.

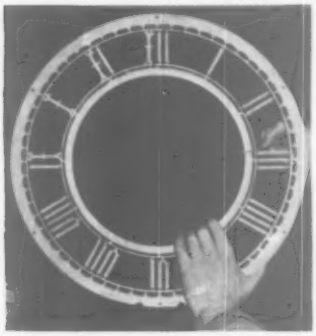
The names and addresses of manufacturers of any item illustrated in MOSAICS, together with more detailed information relating to their products—including price and availability—will be forwarded to readers on request.

Letters should quote the serial number and be addressed to :

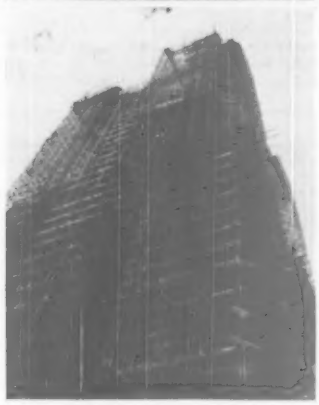
The Associate Editor,
*The Architect and Building News*,
Dorset House,
Stamford Street, S.E.1

*Please mark the envelope MOSAICS.*

# * INTEREST *



*One of 172 clock faces for the new House of Commons. The clocks vary from 4" to 20" diameter. Dials and hands of fretted bronze with Gothic chapters have been designed by Sir Giles Gilbert Scott. The complete controlled clock system, now nearing completion, is by Gent & Co., Ltd., Leicester*



*WHAT AND WHERE ?*

*Two views of the same job. Sixty-six miles of scaffolding nearing completion before restoring stone on a famous tower*

**MR. COSTAIN MADE AN URGENT PLEA** to the Government, in a recent speech, to widen the scope of its housing programme. With improving export figures and the rise in the gold reserves, the Government had less and less reason for refusing to increase its housing programme. Why not a progressively rising scale ? Say, 200,000 this year—easily within the capacity of the industry, 250,000 next year and 300,000 in 1952 ? A scale of that sort would put the industry on its mettle. It would help to reduce costs, for it would put fresh heart into the operatives.

•

**A NEW INVENTION ON TEST** at Bradford Technical College is designed to replace standard joists with 2 in. × 1 in. timber joined by metal strip. The patentee is James H. Redman, a retired building operator, who submitted to M.O.W. a patent jig for bricklaying with which the inventor claims a possible rate of 1,000 bricks an hour.

Manufacture of the new joist has been undertaken by an engineering firm. The device may enable second-hand timber to be used.

•

**A THOUSAND BRICKS IN EIGHT MINUTES** fifteen seconds—this was the rate of hoisting bricks achieved by four men, using a light transportable hoist in conjunction with brick-clamping trucks, in a recent test. The occasion was the opening of the Warry Patent Building Equipment Company's new factory on July 13th, at Faggs Road, Feltham.

**ROAD SURFACES CONTAINING RUBBER** have been laid to undergo long-term tests at the Dunlop Factory, Speke, Liverpool. The object of the test is to show whether surfaces containing rubber last longer, cost less and reduce skidding.

•

**THE LORD MAYOR OF LONDON** has accepted an invitation from the Council of the London Master Builders' Association to luncheon in the Savoy Hotel on Wednesday, October 25th. Mr. R. R. Costain, President of the L.M.B.A., will preside.

•

**A STANDARD BASIS OF COMPARISON** for laboratory tests on protective schemes for iron and steel has been produced by British Iron and Steel Research Association in the form of a reference stoving paint. The formulation may be had from BISRA Corrosion Laboratory, 514 Bristol Road, Birmingham, 29.

•

**SHORTAGE OF PACKAGING** may hold up production unless salvage of waste paper improves. The Waste Paper Recovery Association appeals to all engaged in Industry to recover all scrap. Queries on disposal will be answered from 52 Mount Street, London, W.1.

•

**ASPHALTIC ROADWAYS LIMITED** announce that Mr. F. E. Trigg, J.P., relinquished his appointment as a director and joint managing director of the company owing to ill health, from June 30th, 1950. Mr. D. B. Haigh has been appointed managing director of the company.

# ACCIDENTS IN BUILDING

*SERIOUSLY THOUGH . . . .*

*Building, like car driving, can be a dangerous game. The last thing that the operative wants is to be mollycoddled. But there is a sane approach to the problem which realises that accidents—apart from the personal loss they may cause—are also responsible for loss of production and needless waste of everybody's time and money, be it operatives, employers or owners.*

*With the permission of H.M.S.O. and the co-operation of the Royal Society for the Prevention of Accidents this series of cartoons, specially drawn by Peter Bay, A.R.I.B.A., will illustrate some accident prevention measures covered by the Building (Safety, Health and Welfare) Regulations 1948.*

DO YOU KNOW THE RULES?

THE REGULATION . . . 92 (1) *No timber or material with projecting nails* shall be used *in any work in which they are a source of danger to persons employed or be* allowed to remain *in any place where they are a source of danger to such persons.*

(2) *Loose materials where not required for use* shall not be placed or left *so as to impede the passage of persons upon platforms, gangways, floors. . . . Materials shall not be insecurely stacked . . . or so stacked as to overload and render unsafe any floor, roof, or other part of a building.*

# GOOD, BAD OR INDIFFERENT?

*By A. FOREMAN*

*No.* 3

## Fibre Building Boards

I find that there still seems to be confusion in some people's minds in regard to the meaning of the term "Building Board"; this description covers a wide variety of quite different products having very different properties and consequently each is only suitable for certain specific jobs. There are two essentially different types, firstly the plaster boards, whose essential ingredient is gypsum-type plaster, and secondly, the fibre-boards, whose basis is wood fibre, in one of a number of different forms. This week I want to talk about the second of these groups, namely fibre boards. As there are so many different varieties on the market it is not easy to choose the right one for any particular job. Apart from this a common mistake is to order boards by the manufacturer's name only, overlooking the fact that one manufacturer probably makes all types and that often there is little difference between boards of the same type.

The main details are set out in the table below, but the following additional points are important.

*Strength.* This term is of course relative and takes into account the fact that there are varying thicknesses for the different types; in each material the strength obviously increases as the boards become thicker. In general, this term covers the resistance of the boards to impact and to sagging under their own weight when used in positions where such sagging might happen.

*Fungal resistance.* If boards are to be used in damp positions they should be bitumen impregnated or treated with a preservative by the manufacturer.

*Fire resistance.* Fibre boards have a tendency to increase the fire risk in a building, because if they are heated they may suddenly burst into fierce flames. Therefore if used on stairways, corridors and similar places they should be "fire retardent," that is, treated to reduce this risk.

There are various degrees of resistance known as Classes I to IV in decreasing order of resistance. Note that the treatment may be on both sides or one side only. If the boards are being fixed on battens the latter types may still create a fire risk in the space behind the boards. In view of these degrees of resistance it is not sufficient to mark the boards "flame-proof" as is sometimes the case.

*Surfaces of hardboards.* Usually the boards have a rough surface on the back but at least one maker produces a board with two smooth faces. Another type has a regular pattern on the back which is quite attractive.

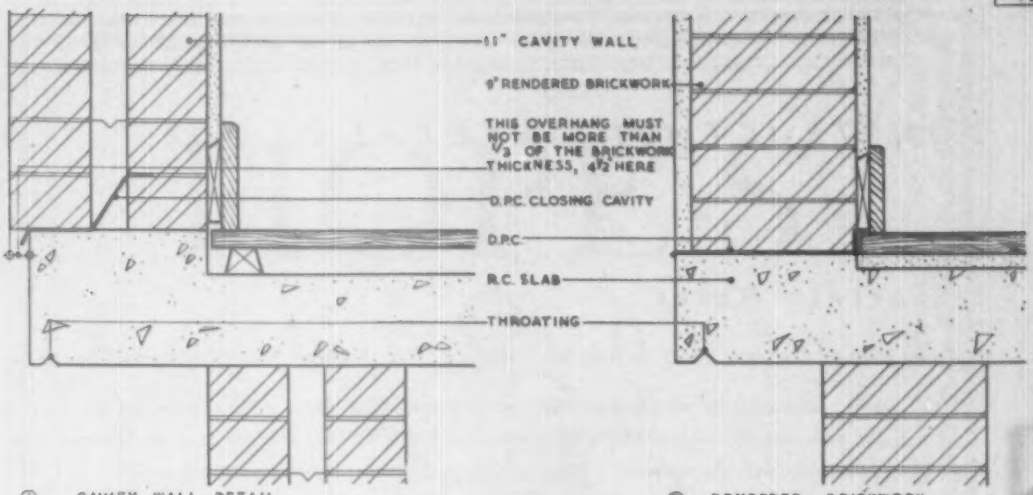
*Decorated boards.* I hear that hardboards will soon be available again with a white, green or mottled surface or with a tiled pattern incorporated in them. These will obviously meet many needs for a washable surface which needs no further decoration.

*Moisture movement.* It is unfortunate that it is difficult to get any precise figures on moisture movement. I believe, though, that increases in length of 0·3 per cent may occur if the humidity of the air rises from 40 to 90 per cent, as it may sometimes do inside a building. Moreover if the boards become soaked the increase may be as much as 2 per cent. These amounts are so big that this point needs watching, particularly if the boards are going to be used as a substitute for plywood which has a negligible moisture movement. In cases of doubt, it is best to consult the manufacturers who will usually be able to advise you of the best way of meeting a particular problem.

## INFORMATION AND CATALOGUES RECEIVED

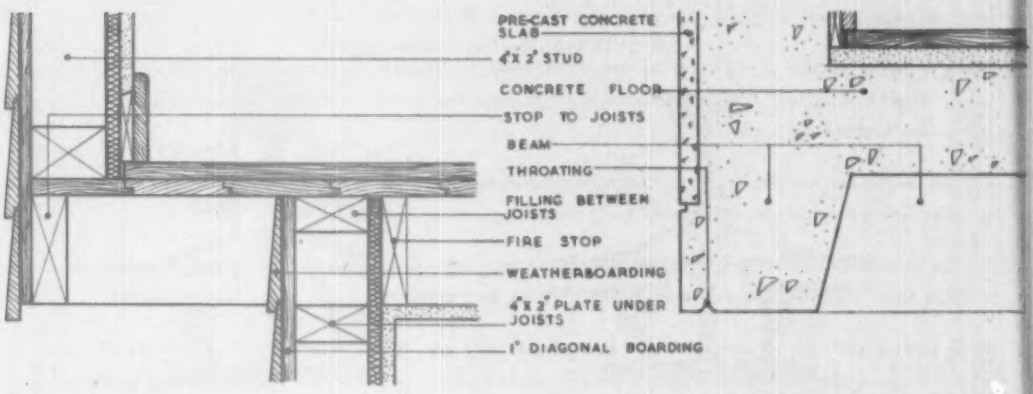
- *Messrs. Stramit Boards, Ltd., announce the appointment of Mr. A. W. Pyatt as their Technical Representative for the Midlands.*
  *Mr. Pyatt has been representing the Federation of Master Builders in the Midlands and is known to a large number of builders and architects throughout this area.*
- *Dorman Long & Co., Ltd., have produced an attractive catalogue listing their full range of products with notes giving the works at which they are produced.*
- *The Schuman Plan is summarized and the raw material situation and interdependency of European steel-producing countries are reviewed in the June issue of "Steel News," issued by the British Iron and Steel Federation.*
- *The English Joinery Manufacturers Association has issued a leaflet on the availability of timber for windows and door frames in relation to MOH circular 100/49 which, the leaflet states, "Shows clearly that all housing authorities who wish to use wood windows, door frames, etc., will be granted 1·5 standards per house without question. . . "*
- *Safway Scaffolding, illustrated in the July 7th issue of the A. & B.N., is shown and described in detail in a catalogue received from Sterling Foundry Specialities Ltd., who are now manufacturing in this country.*
- *Associated Lead Manufacturers, Ltd., have produced a good looking booklet, "Painting with a Policy." Copies are available on request from Ibex House, Minories, London, E.C.2, or Crescent House, Newcastle-on-Tyne, or Lead Works Lane, Chester.*
- *Spiral Tube & Components, Ltd., have sent us an informative booklet giving specifications and output data of their unit heaters. With each item there is a space for notes.*

| Type | Density lb/cu. ft. | Thickness (inches) | Strength | Water Resistance | Insulating Value | Surface and Appearance | Purpose |
|---|---|---|---|---|---|---|---|
| INSULATING ... | 25 max. | ½, ¾ or 1 | Medium | Low | Good | Soft and woolly or rough and hairy. Buff or light grey | Underlays for flooring and roofing. Linings for walls and ceilings. Base for plastering. Permanent shuttering |
| Bitumen impregnated | — | — | — | — | — | Dark grey ... ... | For damp positions |
| Acoustical ... ... | — | — | — | — | — | Perforated or slotted | Linings with reduced sound absorption |
| WALLBOARDS | | | | | | | |
| Homogeneous ... | 30 max. | ⅛ or ¼ | Low | Low | Medium | As insulating board ... | As insulating board for positions where reduced strength and insulation value are not important |
| Laminated ... ... | 30 max. | ⅛, ¼ | Medium | Low | Medium | Smooth. Cream, buff or grey | |
| HARDBOARDS | | | | | | | |
| Medium ... ... | 30-48 | ⅛ to ½ | Medium | Medium | Medium | Ivory to brown. Smooth face, rough back | Wall and ceiling panelling. Underlays for flooring |
| Standard ... ... | 50 min. | ¼ or ⅛ | Good | Good | Low | As above but may be same both sides | Panelling where exposed to abrasion. Exterior uses if painted. Flush doors |
| Super or Ultra ... | 50 min. | ¼ or ⅛ | Good | Very good | Low | Usually dark brown ... | Increased resistance to abrasion. Flooring. Panelled doors. Lining for formwork for concrete |



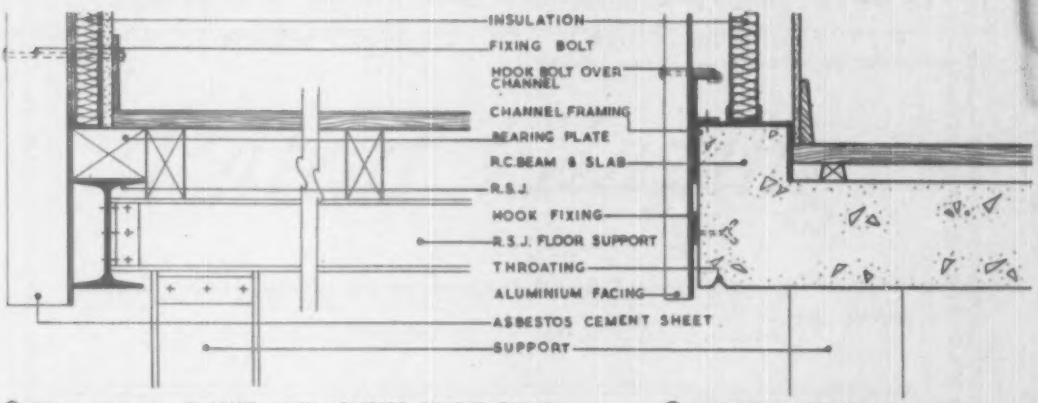

① CAVITY WALL DETAIL

② RENDERED BRICKWORK




③ TIMBER WALL DETAIL

④ CONCRETE WALL




⑤ STEEL FRAMED BUILDING WITH ASBESTOS CEMENT FACING

⑥ ALUMINIUM FACED WALL WITH CONCRETE FLOOR

SCALE: 1½" TO ONE FOOT

Supplement to *THE ARCHITECT and Building News*, July 21, 1950.

# CONSTRUCTION SHEET L.2, C.16.

## Editorial Notes

*This sheet gives six alternative details for projection on the outer face of external walls in various materials.*

1. *The cavity is closed above the reinforced concrete slab by a damp proof course. This is taken out over the face of the slab and forms a drip. The overhang of brickwork should never be more than one-third the thickness of the brickwork. In a cavity wall, the thickness is taken as 4½", therefore the maximum overhang is 1½".*

2. *A damp proof course is provided at the base of the wall above the reinforced concrete slab. The damp proof course must be taken through the rendering. The slab should be throated.*

3. *A 2" stop is provided at the end of the timber floor joists. The joists are carried by one or more studs, depending on the weight to be borne. The weatherboarding on the projecting face is carried down to form a drip. A fire stop is provided between the joists.*

4. *The precast concrete slab acting as a permanent shuttering, is detailed as a facing to the concrete wall. Throatings are provided in the concrete immediately below the facing slab and under the beam.*

5. *The asbestos cement sheets are carried down below the flange of the R.S.J. and act as a drip. The units of the wall are bolted together, a washer being provided at the head of the bolt.*

6. *A built-up wall unit of aluminium with insulation backing and channel framing is detailed. The aluminium is secured to the reinforced concrete slab by means of a hook attached to the facing, and an eye head to the lug set in the concrete. A hook bolt is used to secure the aluminium to the framing. In all cases of fixing through aluminium, aluminium alloy fixings are preferable, but galvanised or cadmium plated steel may be used instead. Copper or steel fixings must never be used. Where aluminium sheets come into contact with steel or other metals, it should be ensured that the paint films are in good condition.*

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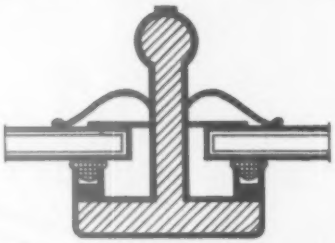
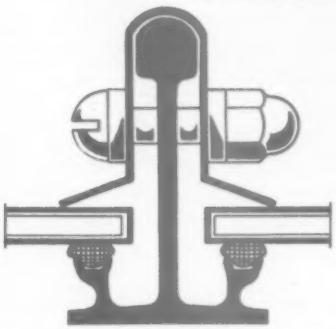
We welcome comments from readers. These will be summarised and published. Letters should reach us as early as possible to avoid time lag.

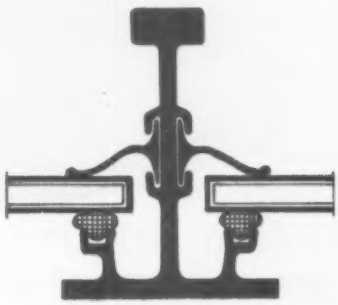
# HOPE'S



THE ORIGINAL *Lead-clothed Steel Glazing Bar*
*Permanent and Weathertight*



THE ALTERNATIVE
*Aluminium Glazing Bar*
*with Aluminium Capping*



A COMBINATION
*Aluminium Glazing Bar*
*with Lead Wings*

# *Patent Glazing*

HENRY HOPE & SONS LTD.
*Smethwick, Birmingham & 17 Berners St., London, W.1*

# It took 157 years

**For seven generations Newton Chambers have been making tanks and vessels of all shapes and sizes in their Thorncliffe works. It was therefore a natural development that they should have been among the first to introduce plastic lined tanks which were acid-proof, solvent proof, and resistant to nearly all chemicals. In this and in many other projects, the experience of 157 years, flourishing within the stable Thorncliffe community, enables Newton Chambers to produce goods of an unremitting high quality.**

## Newton Chambers

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# FLUORESCENT LIGHTING—3

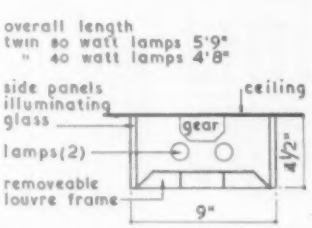
*By J. B. Harris, A.M.I.E.E., F.I.E.S.*

The evolution of light sources has naturally influenced the design of lighting fittings. In many instances, electric lamps and shades continue to be used in a manner suggestive of waxed candles. The reasons for this are closely bound up with subjective preference. The fluorescent lamp provides an opportunity for a completely new approach to the problem of lighting design. This method of light production makes it possible to obtain higher illuminations in an economic and practical manner but the fittings required are relatively large in mass and their dimensions depend upon those of the lamps themselves. In view of their utilitarian function, the design of fittings suitable for industrial application is relatively simple. Commercial and decorative units present æsthetic difficulties. A survey of the progress made in the field of fluorescent luminaires indicates that much more co-operation between architects and lighting engineers is needed. Too many fittings on the market are the representative efforts of those possessing little or no knowledge of engineering or art. It would seem that there is scope in the fluorescent lighting field for guiding rather than pandering to public taste.

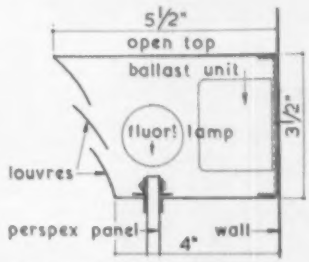
In the matter of design there are certain fundamental, but obvious, points which need consideration. The fitting must be designed to suit the number and size of lamps required for any given purpose. It is essential to arrange that the control gear is accommodated in an easily accessible, but unobtrusive, position in the fitting. This will facilitate wiring and maintenance. The resulting increase in weight necessitates good fixings. Sole reliance should not be placed upon the use of conduit box mounting. The prime function of the luminaire is that it should provide light, and consequently close attention must be paid to the optical features of the design. The introduction of internal reflectors and/or judicious positioning of the lamps will assist in minimizing end shadows and the construction of prototypes will be found to be helpful in this connection. The lamps themselves, in a well-designed fitting, should be screened from view at normal angles of vision so as to avoid discomfort and disability glare. Glass and plastic materials which possess the property of diffused transmission (acid-etched, light-opal, sandblasted) may be used for lowering surface brightness. The louvre principle is also applicable either as an integral part of the fitting or as a built-in feature.

An important design factor which calls for attention is that the lamp end caps tend to darken the end of the fitting in comparison with the rest of the body, unless counteracted.

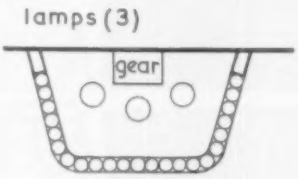
The general arrangement must permit the diffusing screens or louvre frames to be easily removed, as in many instances cleaning and lamp replacement will be done by one operative. Fluorescent lighting is being widely utilized in traditional type interiors such as banks and civic buildings. And whilst an unsightly fluorescent installation is no worse probably than a bad traditional, the mere fact of adopting the new system offers scope for improved appearance if the installation is properly designed. In the majority of cases it will be possible to use fittings selected from commercial samples but, in view of the absence of British Standard Specifications in respect of performance and quality, close inspection (and testing possibly), is advisable prior to final acceptance. Initial price alone should not be allowed to determine purchase, as it must be remembered that decreasing price (arising from active competition), often leads to lowering of standards of quality. Independent expert opinion will prove invaluable to any architect contemplating a fluorescent lighting scheme and the expenses involved in obtaining such advice are well justified when consideration is given to the total initial cost of a large-scale installation. If special fittings are being designed, for the manufacture of which it is intended to invite tenders, it is essential that all drawings and designs be accompanied with comprehensive specifications covering all aspects of manufacture and including treatment of metals to prevent possible rusting. The success of any lighting scheme depends as much on appearance and performance during life as it does upon eye-appeal when newly installed.




*The illustrations show three different applications of fluorescent lighting with one, two and three lamps*




COMBINED INDIRECT WALL BRACKET & LUMINOUS FEATURE




diffusion thro' clear glass tubes carried in a hinged frame

overall length 6'0"

## CONSTRUCTION DETAILS

### *PREFABRICATED TIMBER HOUSES*

Architects :

Laurence King

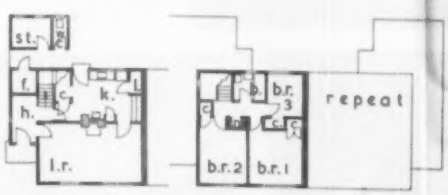
and

I. D. F. Picken,

F./A.R.I.B.A.

The illustrations on page 90 show details of construction of a pair of houses recently completed at St. Albans. The wall panels, windows, roof members and fittings in these houses were prefabricated in Sweden to plans prepared by the architects. A provisional licence was granted for these houses. In course of erection several economies have

(*Continued on page 90*)




GROUND FLOOR FIRST FLOOR PLAN

scale
10 0 10 20

Plans and a view of the front of the houses illustrated on page 90.

# TIMBER HOUSES AT ST. ALBANS

(Continued from previous page)

been made, particularly in the amount of roof timber.

Features of interest are the large glass area windows with their Swedish latches and the built-in kitchen fitments.

The roof of the pair illustrated is covered with concrete tiles.

The estimated time for completion of pairs of these houses in large numbers is eight weeks. Plans for terrace types are on the drawing board.

The client is Mr. Stennett-Willson who, as a result of this experiment intends to import materials for houses of this type on a large scale from the fabricators, Götene Trä Industri, Götene, Sweden.

The quantity surveyor was L. C. Roberts, F.R.I.C.S.

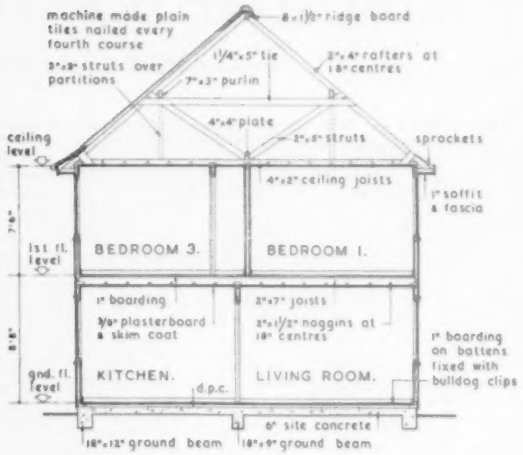
The general contractors for the prototype pair were Messrs. Myton, Ltd.

The three progress photographs, left, show the construction of the wall panels. Those below show, top left, the window catch, which ensures tight closure, and two types of door handle.

The drawings give the principal features of the construction.

Sub-contractors :

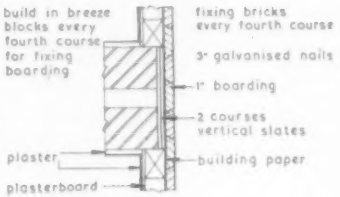
*ELECTRICAL INSTALLATION*
Thompson Ritchie & Co., Ltd.
*FENCING*
Invicta Fencing Co., Ltd.
*FLAT ROOFING*
Permanite, Ltd.
*GLAZING*
Aygee, Ltd.
*PLASTER BOARD*
The British Plaster Board, Ltd.
*PLASTERING and PAINTING*
Simco Plastering Co., Ltd.
*PLUMBING*
Pressdee, Ltd.
*SANITARY FITTINGS*
John Bolding & Sons, Ltd.
*TILES*
The Marley Tile Co., Ltd.

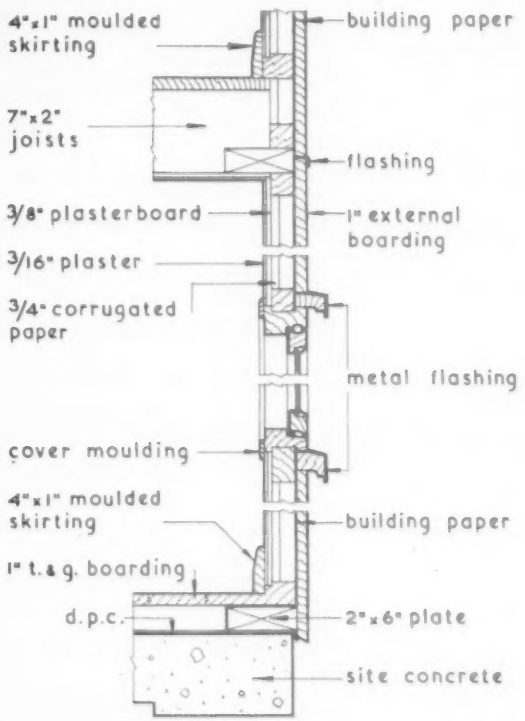



ABOVE :
CROSS SECTION.

RIGHT :
PLAN AT JUNCTION OF PARTY WALL AND EXTERNAL WALL PANELS.

BELOW :
SECTION OF FLOORS AND EXTERNAL WALLS.



# LIGHT ALLOY SCAFFOLDING

For safety, strength, stability and speed of erection, there is nothing to touch this light alloy tubular scaffolding. It is easy to handle, corrosion resisting and strong as strict metallurgical control can make it ; and each fitting is scientifically designed for its especial purpose by experts with many years' practical experience of the problems involved.

For your next contract make certain you use light alloy scaffolding.

*The fittings illustrated above are available in light alloy or steel and comprise.*

1. Putlog Coupler
2. Titan Double Coupler
3. Swivel Coupler
4. Expanding Joint Pin
5. Putlog Head
6. Combination Joint Coupler

*Write for further information and for details of the T.W.W. SALE or HIRE arrangements.*

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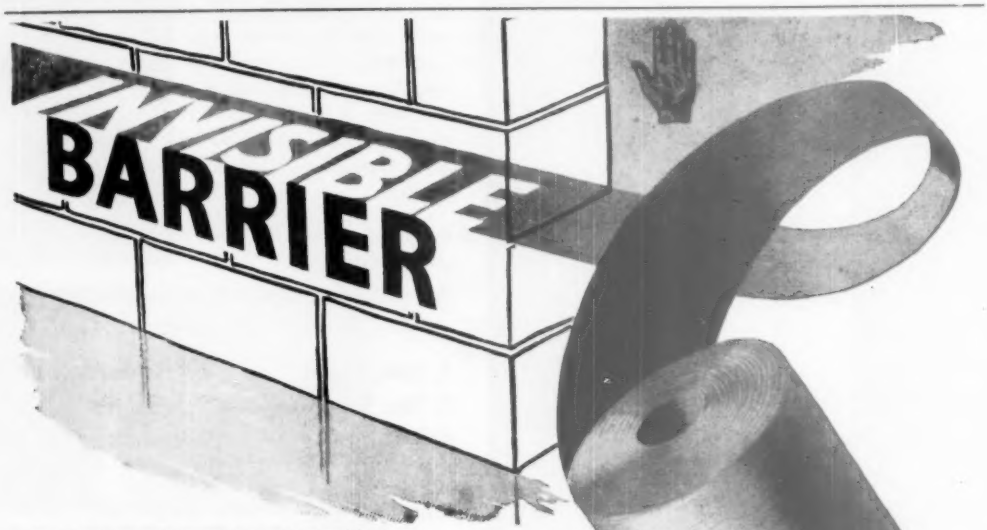


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**ASBESTOS BASE DAMPCOURSE**
*Supplies can be obtained through Builders Merchants*

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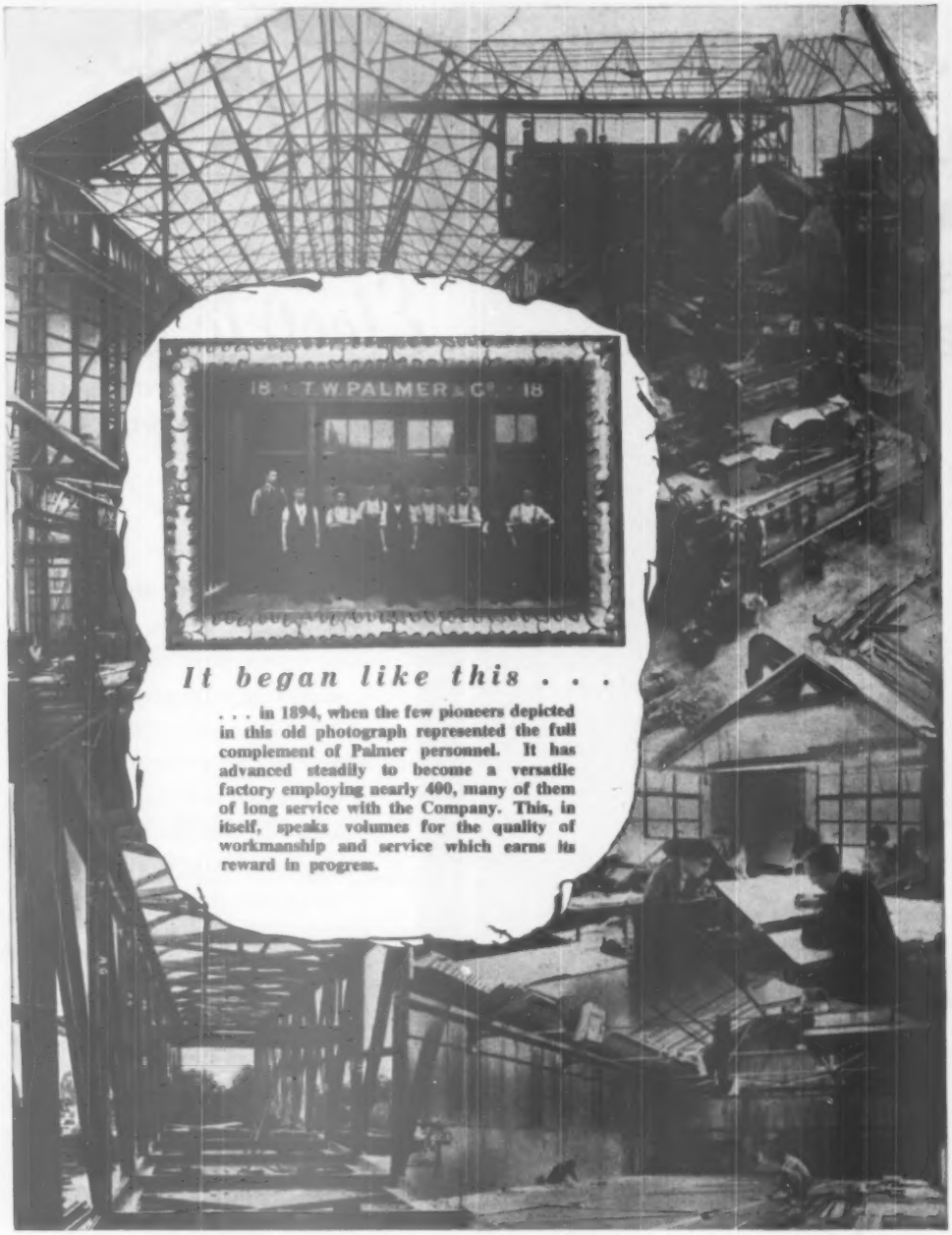


*It began like this . . .*

. . . in 1894, when the few pioneers depicted in this old photograph represented the full complement of Palmer personnel. It has advanced steadily to become a versatile factory employing nearly 400, many of them of long service with the Company. This, in itself, speaks volumes for the quality of workmanship and service which earns its reward in progress.

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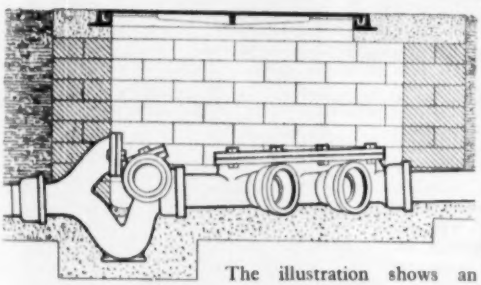

The illustration shows an inspection chamber and intercepting trap (provided with a flanged clearing arm and cover) constructed from standard parts supplied by Burn Bros. A separate cover gives access to the trap and a side socket connects with a fresh-air inlet.

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Fire-escapes are made by the Lion Foundry to suit any type of building, hospital, hotel, factory, office, house. They can be made of the "straight" type as shown on this photograph or of the "spiral" type.

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The cast-iron treads and landings ensure a life as long as the building itself. Cast lasts.

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The fire-escape stairs shown here are typical of many made and erected by Lion Foundries.

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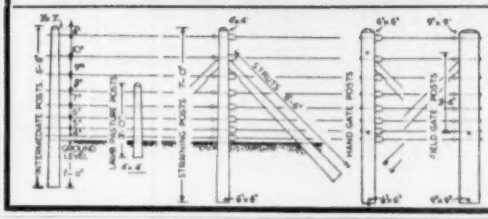

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## For Eight Wires at Standard Railway Pattern Spacing

9' 0" centres is normal practice for posts, but with droppers in use, centres may safely be extended to 24' 0". Gate Posts are prepared to instructions and all posts can be holed for barbed wire outriggers to order.

| Description. | Size. | Weight. |
|---|---|---|
| Intermediate Post .. | 5" × 5" to 3" × 3" × 6' 6" | 100 lbs. |
| End Strainer .. .. | 6" × 6" to 4" × 4" × 7' 0" | 175 lbs. |
| Intermediate Strainer | " " " " | 175 lbs. |
| Angle Strainer .. .. | " " " " | 175 lbs. |
| Hand Gate Post .. | 6" × 6" × 7' 0" | 250 lbs. |
| Field Gate Post .. | 9" × 9" × 7' 0" | 560 lbs. |
| Lamb Pasture Post .. | 4" × 4" to 3" × 3" × 3' 0" | 36 lbs. |
| Strut .. .. .. .. | 5" × 5" to 3" × 3" × 6' 6" | 100 lbs. |

*Heavy and Light Agricultural and Housing Posts, are available from stock for lighter wire fences. Other Vinculum Standards include posts for Chain Link, for Guard Tubes or Rails, Open Pale or Close Boards, etc., etc. Please write or 'phone for particulars and prices.*

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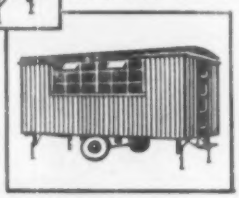

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PATENT "ALL-STEEL"

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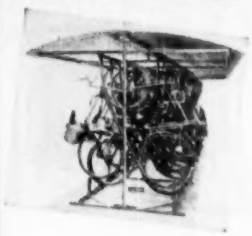

Type 2 double-sided semi-vertical stand built with 15¾ in. centres. (Similar stand — Type 10 — built with 12 in. centres.)

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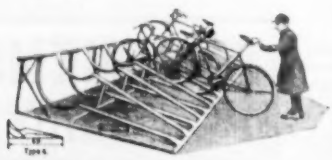

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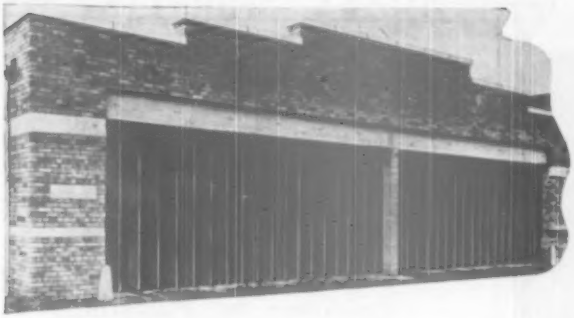

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*to efficiency*

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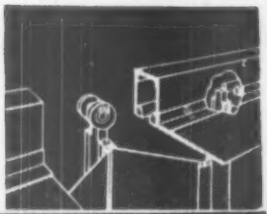

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Especially suitable for the home decorator. It is easy to apply and dries with a hard glossy surface. Obtainable in an attractive colour range.

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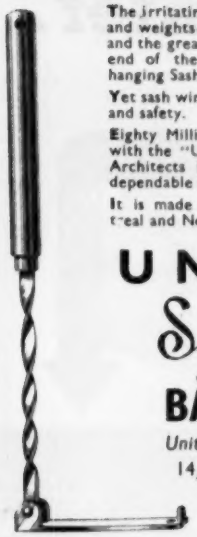

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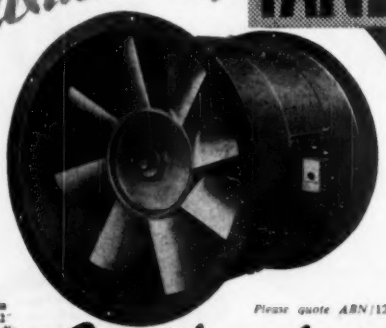

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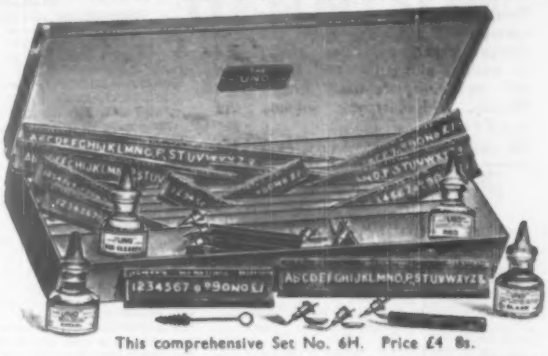

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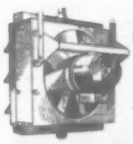

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## OFFICIAL ANNOUNCEMENTS

### BOROUGH OF GOSPORT.

BOROUGH ENGINEER'S OFFICE.

APPOINTMENT OF ARCHITECTURAL ASSISTANTS.

APPLICATIONS are invited for the following appointments in the Borough Engineer's Department:—

(a) ARCHITECTURAL ASSISTANT on the permanent staff, A.P.T. Grade IV. Salary £480-£525 (by 3 increments of £15).

(b) ARCHITECTURAL ASSISTANT on the temporary staff, A.P.T. Grade I. Salary £390-£435 (by 3 instalments of £15).

Applicants for post (a) should be of Intermediate R.I.B.A. standard and experienced in the preparation of sketch plans, working drawings, details, specifications, have knowledge of quantities, and will be expected to deal with contracts with the minimum of supervision.

Applicants for post (b) must be capable of preparing sketch plans, working drawings, details and specifications under supervision.

Housing accommodation will be made available to the successful applicant in respect of post (a) only, if required.

Applications, endorsed "Architectural Assistant Grade IV," or "Architectural Assistant Grade I," stating age, qualifications, experience, present and past appointments, together with two copies of recent testimonials, should be delivered to the Borough Engineer, Town Hall, Gosport, not later than 2nd August, 1950.

EDWARD ADDENBROOKE, Town Clerk.
Town Hall, Gosport.
13th July, 1950. 14678

### KENT COUNTY COUNCIL.

APPLICATIONS are invited from Fellows or Associates of the Royal Institute of British Architects for appointment in the Buildings Department as a PRINCIPAL ASSISTANT ARCHITECT at a salary of not exceeding £900 a year to be fixed according to the qualifications and experience of the successful candidate.

The post is superannuable and the selected candidate will be required to pass a medical examination.

Candidates must have had wide experience in the planning, designing and construction of public buildings, be used to staff control and have had considerable administrative experience.

Applications on forms obtainable from the County Architect, Springfield, Maidstone, must be delivered to him, duly completed, by not later than 12th August, 1950.

W. L. PLATTS, Clerk of the County Council.
County Hall, Maidstone.
12th July, 1950. 14672

### HUNTINGDON COUNTY COUNCIL.

COUNTY ARCHITECT'S DEPARTMENT.

SENIOR ASSISTANT ARCHITECT, GRADE VII, A.P.T.

APPLICATIONS are invited for the appointment of a SENIOR ASSISTANT ARCHITECT. Salary Grade VII A.P.T., £635 x £25 - £710 p.a.

Applicants should hold the A.R.I.B.A. or equivalent qualification and have had suitable experience.

The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and the successful candidate will be required to pass a medical examination.

Applications should be submitted to S. J. Hands, A.R.I.B.A., County Architect, County Buildings, Huntingdon, by not later than Tuesday, 1st August, 1950, with copies of two testimonials or the names of two referees.

JOHN KELLY, Clerk of the County Council.
County Buildings, Huntingdon.
21st July, 1950. 14677

### EDINBURGH COLLEGE OF ART.

SCHOOL OF ARCHITECTURE.

APPLICATIONS are invited for the following full-time appointments on the Teaching Staff of the College:—

SENIOR ASSISTANT. Salary scale £700-£800.
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Commencing salary according to qualifications and experience.

Forms of application and conditions of appointment can be obtained from the Secretary, Edinburgh College of Art, Lauriston Place, Edinburgh, 3, to whom completed applications should be sent not later than 12th August, 1950. 14679

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THERE are vacancies in the Chief Architect's Division for ARCHITECTURAL ASSISTANTS and LEADING ARCHITECTURAL ASSISTANTS with recognised training and fair experience. Successful candidates will be employed in London and elsewhere on a wide variety of Public Buildings, including Atomic Energy and other Research Establishments, Telephone Exchanges, and Housing.

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Although these are not established posts, some of them have long term possibilities and competitions are held periodically to fill established vacancies.

Apply in writing, stating age, nationality, full details of experience, and locality preferred, to Chief Architect, W.G.10/BC, Ministry of Works, Abell House, London, S.W.1, quoting reference W.G.10/BC. 14671

### COUNTY BOROUGH OF SOUTHPORT.

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Applicants must have administrative experience and be capable of organising the Department, which is a new one within the Council's establishment, and its functions, for which the officer selected will be responsible, will include the whole of the Council's architectural work and planning under the Town and Country Planning Act, 1947. Applicants must have high ability and good experience, and preference will be given to those who have a degree or diploma in Architecture and/or are Associates R.I.B.A. and I.T.P.

The appointment will be subject to the provisions of the Local Government Superannuation Act, 1937, and the officer selected will be required to pass a medical examination.

Applications stating age, qualifications, present and past appointments and details of experience, together with the names and addresses of three persons to whom reference may be made, must be forwarded to the undersigned endorsed "Borough Architect and Town Planning Officer," not later than the 31st day of July, 1950.

Canvassing will disqualify.

R. EDGAR PERRINS, Town Clerk.
Town Hall, Southport.
July, 1950. 14664

### LONDON COUNTY COUNCIL.

APPLICATIONS are invited for positions of ARCHITECTURAL ASSISTANT (salaries up to £580 a year) in the Housing and Valuation Department. Commencing salaries will be determined according to qualifications and experience. Engagement will be subject to the Local Government Superannuation Acts, and successful candidates will be eligible for consideration for appointment to the permanent staff on the occurrence of vacancies.

Successful candidates will be required to assist in the design, layout and preparation of working drawings for housing schemes (cottages and multi-storey flats) and will be employed in the Housing Architect's Division.

Forms of application may be obtained from the Director of Housing, The County Hall, Westminster Bridge, S.E.1 (stamped addressed envelope required and quote reference A.A.1). Canvassing disqualifies. (816). 10101

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ARCHITECT'S DEPARTMENT. PLANNING STAFF.

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Particulars and application forms from The Architect (AR/P/P), The County Hall, Westminster Bridge, S.E.1, enclosing stamped addressed foolscap envelope. Canvassing disqualifies. (385). 10098

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## INDEX TO ADVERTISERS

**Official Notices, Tenders, Auctions, Legal and Miscellaneous Appointments on pages 38 and 39.**


Allied Paints & Chemicals Ltd. .. 35
Anderson, D. & Son Ltd. .. .. .. 28
Baldwin, Son & Co. Ltd. .. .. .. 37
Bath & Portland Stone Firms Ltd. The .. .. .. .. .. .. .. .. 40
Blackwell Wyckham Ltd. .. .. 39
Bolton Gate Co. Ltd. .. .. .. .. 35
Bostwick Gate & Shutter Co. Ltd. 39
Boulton & Paul Ltd. .. .. .. .. 6
Box, C. W. .. .. .. .. .. .. .. 39
Bryce White & Co. Ltd. .. .. .. 36
Brady, G. & Co. Ltd. .. .. .. .. 4
Briggs, William & Sons Ltd. .. .. 9
Bratt Colbran Ltd. .. .. .. .. .. 10
British Electrical Development Association Ltd., The .. .. 15
British Reinforced Concrete Engineering Co. Ltd., The .. .. *Outside Back Cover.*
Burn Bros. (London) Ltd. .. .. .. 30
Callow Rock Lime Co. Ltd. .. .. 36
Carron Company .. .. .. .. .. .. 20
Cement Marketing Co. Ltd., The 18
Celotex Ltd. .. .. .. .. .. .. .. 3
College of Estate Management .. 40
Cowper Penfold & Co. Ltd. .. .. 5
Dennison Kett & Co. Ltd. .. .. 39
Dunlop & Ranken Ltd. .. .. *Inside Fr nt Cover.*
Empire Stone Co. Ltd. .. .. .. .. 21
Etchells, Congdon & Muir Ltd. .. 30
Fleetwood Paints Ltd. .. .. .. .. 12
Engert & Rolfe Ltd. .. .. .. 39, 40
Evans Lifts Ltd. .. .. .. .. .. .. 39
Expanded Metal Co. Ltd., The .. 40
General Electric Co. Ltd., The .. 34
Gibson, Arthur L. & Co. Ltd. .. .. 8
Hammill Brick Co. Ltd., The .. .. 21
Hall, Matthew & Co. Ltd. .. .. .. 24
Harvey, G. A. & Co. (London) Ltd 24
Hope, Henry & Sons Ltd. .. .. .. 25
Keir & Cawder Ltd. .. .. .. .. .. 28
Lewis Bitumen & Asphalt Co. Ltd. 40
Lion Foundry Co. Ltd. .. .. .. .. 31
Lithex Products .. .. .. .. .. .. 39
McCall & Co. (Sheffield) Ltd. .. .. 2
Margolis, M. .. .. .. .. .. .. .. 39
Marley Tile Co. Ltd., The .. .. .. 7
Matthews & Yates Ltd. .. .. .. .. 36
Mewes, G. E. Ltd. .. .. .. .. .. 24
Newton Chambers & Co. Ltd. .. 26
Northarc Organisation .. .. .. .. 39
Odoni, Alfred A. & Co. Ltd. .. .. 34
Palmer, T. W. & Co. Ltd. .. .. .. 29
Pilkington Bros. .. .. .. .. .. .. 1
Pressdee Ltd. .. .. .. .. .. .. .. 34
Price, D. W. .. .. .. .. .. .. .. 34
Radiation Group Sales Ltd. .. .. 22
Radiation Large Cooking Equipment Ltd. .. .. .. .. .. .. .. 16
Ringmer Building Works Ltd. .. 39
Rom River Co. Ltd., The .. .. .. 31
Ruberoid Co. Ltd., The .. .. .. .. 37
Sankey-Sheldon Ltd. .. .. .. .. .. 33
Semtex Ltd. .. .. .. .. .. .. .. .. 31
Sharman, R. W. Ltd. .. .. .. .. .. 39
Simco .. .. .. .. .. .. .. .. .. .. 20
Spiral Tube & Components Co. Ltd., The .. .. .. .. .. .. .. 17
Stramit Boards Ltd. .. .. .. .. .. 13
Structural & Mechanical Development Engineers Ltd. .. .. .. 14
Stephenson Developments (Hudd) Ltd. .. .. .. .. .. .. .. .. 33
Tarmac Ltd. .. .. .. .. .. .. .. .. 32
Tentest Fibre Board Co. Ltd. .. 17
Triplex Foundry Ltd. .. .. .. .. *Inside Back Cover*
Turner, Charles & Son, Ltd. .. .. 32
Unique Balance Co. Ltd. .. .. .. 36
United Paint Co. Ltd., The .. .. 37
United Steel Companies Ltd., The 19
Ward, Thos. W. Ltd. .. .. .. .. .. 27
West, A. & Partners Ltd. .. .. .. 37
Wood Fibre Co. Ltd., The .. .. .. 40
Wragg, Thos. & Sons Ltd. .. .. .. 40


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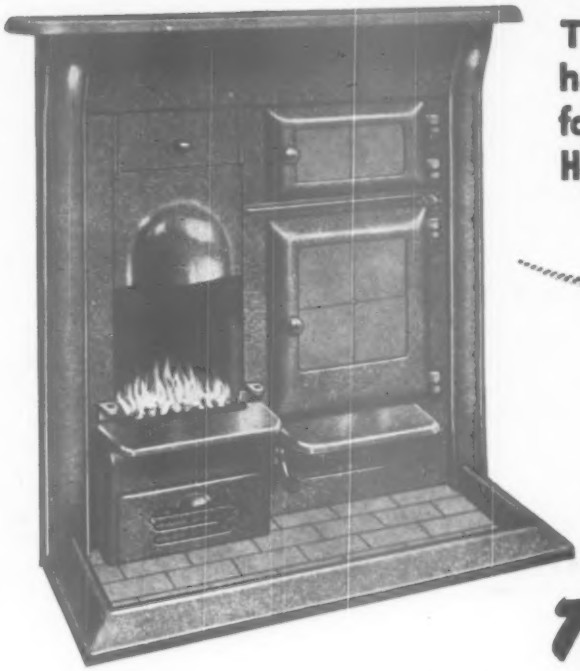

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